SUPPLEMENT.

The Mining Journal,

RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

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Original Correspondence.

OUR COMMERCE IN THE SUPERIOR METALS.

BOARD OF TRADE RETURNS FOR TEN MONTHS OF THE PRESENT YEAR.

The last but one month of the year has arrived, and the character of the metal trade and the prospects of mining for the remainder of the year can be pretty accurately determined. We are glad to say that the condition of things give considerable satisfaction; indeed, the hopes entertained are almost too buoyant, but at all events it is now perfectly clear that the business of mining will be more active during the next two months than it has been for the corresponding period of some years. This partly arises from the great advance in the price of tin, the recent reaction in the money market, so remarkable and abnormal that the brokers and joint-stock banks are discounting from 1¼ to 1⅝ below the minimum of the Bank of England, the impression prevailing, rightly or wrongly, being that the recent Russian successes will afford opportunity for peace negociations, and a conviction that the state of trade, on the whole, is not so depressed as has been generally thought, and as some have endeavoured to persuade the public that it is.

Our exports for the ten months of all commodities are valued at 166,036,212*l.*, and the imports at 329,195,405*l.* Taking both together the amount is about 14,000,000*l.* more than the aggregate last year. For the month the value of exports is 18,372,693*l.*, compared with 17,779,274*l.* during that month of 1876; that of imports is 36,537,002*l.*, compared with 29,657,517*l.* Now, it is a mistake to suppose that imports do not represent profitable business; they in part consist of profits and of repayments, and they give employment to our ships, railways, sailors, labourers, carters, &c., enabling them them to consume metals, and furnishing an impulse to the home trade in them. Moreover, of these imports there were re-exports to the value of 10,434,265*l.*, which must be added to the sum representing the sale of British productions to determine the real value of the export trade.

The commerce in the superior metals presents the following features:—Tin was imported to the amount of 869,828*l.* in the ten months, against 1,012,483*l.* in the same months of last year, and during the month the cost was 89,953*l.*, compared with October of that year, 75,496*l.* Of this imported tin there was shipped to the value of 913,040*l.* for the longer period, as compared with 368,367*l.* in 1876; and for the shorter period 15,077*l.*, in comparison with 15,039*l.* for the same time in that year. British tin was exported to the worth of 392,955*l.* during the last ten months, and 343,105*l.* in the corresponding months of last year. In October last past the value was 49,673*l.*, and that month twelvemonths 26,790*l.* It appears, then, so far as the tin trade is concerned, that more British tin has been exported for the month and for the year to a considerable extent, and that very much less foreign tin has been imported this year than in the same time last year. The present condition of that commerce is favourable, especially to the production of Cornish TIN, for it is contended that *bona fide* stocks are low, and imports are decreasing. It is alleged that the Chinese are taking a very large proportion of all that the Great Eastern Archipelago yields, because they are either substituting it for sheet lead in tea packing or lining the tea chests with it. Moreover, tin is becoming a favourite metal in Asia Major generally, and the Hindoos make gods of it as they do of zinc; they use it for votive offerings to their deities, and decorate their temples with it, as the Chinese do their pagodas, and as the "wisest man" did the Temple at Jerusalem. To the fact that the Chinese are using Straits tin so extensively is attributed the obvious falling off of shipments to this country. The Chinese pay a better price, and freigts from Banca to the Celestial Empire are lower.

It is said that tin mining in Australia has not paid, that the miners are disheartened, that there is at present an indisposition on the part of merchants to consign it hither, and that really we are likely to have less and less foreign tin sent here during the remainder of this year. The advance in price has been sudden and signal. Experienced tin miners and dealers say that it is also sure. Within a short time the market value has risen 7*l.* per ton, and it is now 10*l.* per ton higher than it was at the lowest point before the reaction set in. The smelters are represented as giving 3*l.* per ton over the standard, and they continue their requirements. The animation may be sustained in some measure by speculators, but it did not originate with them; the public increase the consumption and are large buyers. Besides, it is not when metals or mining shares are at their lowest point that the public come in, they invariably buy in a rising market, and this justifies the metal broker and the miner in the belief they now so confidently entertain, that the movement will continue to be "up-hill."

In Cornwall there is great rejoicing at the prospect, and the values of mining shares, both on the Stock Exchange and the general mining share market, have risen out of proportion to the advance of the metal. Some dividend mine shares have gone up 50 per cent., and it is alleged—although we cannot vouch for it—that good progressive mine shares have realised more by 500 per cent. "The good time coming" is also the good time come, and the bark of the tin miner sails before a fair wind. At the time of greatest depression the motto of the *Mining Journal* was "*Nil Desperandum.*" We foresaw the reaction; the vista was long, but there was light beyond it. We now advise prudence and vigilance; the miner of all nations should adopt as his guide "*Nunquam Dormio.*" We shall return to this subject again; our space admits of no more than to notice that our best customer has been the United States. India is likely to take more than formerly. France and Russia deal largely with us, but Germany and Turkey have lately diminished their small imports.

The Lead Trade proceeds with its usual steady course, but does not at present reveal the active tendency of tin. It is right, however, for holders of good prospective lead mining shares to be warned against parting with them in order "to go into tin." On the contrary, as lead is quiet wisdom would dictate to investors in lead mines to increase their interest in them, for come peace or war the lead market will as certainly have a buoyant future as tin has a triumphant present. Our imports for the ten months were valued at 1,692,205*l.*, against 1,460,829*l.* the first ten monthsof 1876. In October they were 215,923*l.*, and October 12 months 211,775*l.* The re-export was insignificant, but British lead was sent away to the money extent of 784,074*l.* during the last ten months, compared with 760,542*l.* in the ten months of the year before. In the two Octobers the value respectively was 95,642*l.* and 62,480*l.*

The lead area of the United Kingdom is very great, and all we want ought to be supplied at home. China and Hong Kong show the largest imports from us, but it is scarcely expected that this will continue to be the case: Russia has always been our next best customer, Germany and France taking very little. Turkish imports are also small. The war has not influenced the export of lead, as was believed would be the case; the belligerents seem to have supplied themselves from America and from Dutch and German stocks. It is to be regretted that we cannot speak as favourably of copper as of the two sister metals. Very conflicting statements are made as to stocks, and heavy complaints are uttered as to over imports. There were for the ten months copper ore imported of the value of 964,514*l.*, and for last month 125,418*l.* In 1876 the figures were 786,321*l.* and 60,572*l.* Regulus, including precipitate, during ten months, 993,437*l.*; one month, 61,483*l.*, compared with 917,644*l.* and 58,614*l.* in 1876. Unwrought or part wrought this year so far 2,487,336; last month, 268,892*l.* In 1876, 2,256,134*l.* and 193,760*l.* Of this copper there was re-exported during the ten months the worth of 865,316*l.*, against 1,187,912*l.* the year preceding. In October the declared value was 74,188*l.*, and the preceding October 158,771*l.* All the copper re-shipped was wrought in part wrought, and the falling off of those re-shipments will in considerable part explain prices. British and Irish production was imported in the form of unwrought ingots, cakes, and slabs to the value of 688,830*l.* and 84,994*l.* in the two periods, comparing with 989,365*l.* and 86,027*l.* last year. Wrought or manufactured was sent off this year of the declared value of 818,644*l.*; last year up to Oct. 31, 853,370*l.* That month this year the export was 82,836*l.*; 1876, 93,714*l.* Mixed or yellow metal sheathing was sent away since Jan. 1 of the declared value of 1,025,956*l.* In 1876 it was in the corresponding time 779,330*l.* The last of the ten months it was 97,128*l.*, and in that month last year 90,682*l.* This latter trade increases, as in former issues of the Journal we predicted it would do.

Brass, into which copper so largely enters, is a very steady export. For the ten months the value was 36,937*l.*, but little different from the ordinary amount. India, France, and Germany are the chief importers. Holland and Belgium rank next.

Zinc was imported crude and in cakes to the amount of 536,003*l.* in the longer period, and manufactures of zinc and in unenumerated forms to the extent in value of 328,752*l.* The imports for the month were not important. The increase upon previous years was steady and progressive, but not of magnitude. Of re-exports there are no returns. The recorded value of the export of British zinc is insignificant, and does not increase. It is the opinion of all persons competent to form one that the price of this metal is artificially kept up, to the disadvantage of the trade and of that in galvanised iron.

The import of Pyrites, whether copper, iron, or sulphur, goes on rapidly increasing, the value was for the ten months 1,437,833*l.*, and for the month 114,050*l.* Last year the returns answer for 1,095,025*l.* and 74,957*l.* None of these pyrites are re-exported. Iron pyrites are largely sent from Ireland to Great Britain, but none are sent abroad.

Quicksilver answers in the ten months for an import valued at 307,928*l.*, and for the month at 4729*l.* In 1876 for the larger period the import was 340,088*l.*, and for the shorter period 7649*l.* The consumption of this metal appears to diminish, from causes which are obscure. The great fall sustained in price has done little to stimulate the trade. In Spain and California there are complaints of heavy stocks, especially in the latter place, and prices are flat in both markets. The re-export trade in this metal shows returns for the ten months of the value of 192,676*l.*, and for the single month of the value of 25,689*l.* During the previous year the figures were 203,898*l.* and 19,448*l.*, and during 1875 they were 336,990*l.* and 35,000*l.* It will be seen that the commerce in this metal, which had the reputation of being profitable, is becoming less extensive than it used to be.

On the whole, our review of the metal trade for so large a portion of the year is encouraging, and opens up fair expectations for the future.

DYNAMITE AND COTTON POWDER.

The report of Major A. FORD, R.A., the Government Inspector of Explosives, directed by the Home Secretary to enquire into the circumstances attending the explosion on Aug. 23 in the London and North-Western Railway tunnel, in course of construction north of Festiniog, to connect that town with Bettws y-coed, is not calculated to increase the confidence felt in the safety of dynamite, tonite, or any other nitro-compound, since it appears to have been proved that the firing of the detonator does not invariably result in the explosion of the whole of the dynamite, tonite, &c. in the same hole. This, coupled with the method of igniting the fuses, which is worthy of untutored savages rather than of practical miners, renders it surprising not that a few men have been killed, but that the deaths are not of daily occurrence. Describing the method of firing, Major Ford states that the end of the piece of fuze projecting from the hole is secured to the rock by means of clay, and a small piece of candle (called by the men a "snuff") is fixed also with clay below the loop thus formed, so that when lighted the flame shall be in contact with the outside of the fuse. If the fuse were simply ignited at the end the flame would pass very rapidly through it to the charge, and there would not be time enough for the men to get out of the way—indeed, some of the charges would in all probability be fired before all the fuses could be ignited; but by placing the snuffs in the position described the fuse must be burnt through before the gunpowder in the interior thereof is reached, and a considerable time consequently elapses before the first report is heard. As soon as all the snuffs are secured to the rock they are rapidly lighted, and the firemen withdraw out of danger. After sufficient time has elapsed the men return to examine the breast in order to ascertain that there have been no misfires, and that all the cartridges have exploded.

With regard to the method of charging, the Inspector states that two or more cartridges are placed in contact with each other in each hole, the detonator with the fuse attached being fixed in the last. Exactly the same method is pursued with tonite as with dynamite. The firemen informed him that it is a common occurrence to find parts of charges in the holes unexploded—in some one cartridge, in others more. One of them said that on one occasion, after 30 holes had been fired, he met with no less than seven parts of holes containing one or more cartridges, the rock not being blown away clear from the bottom of the holes. They had no doubt, they said, that when the outer part of the charge was fired by the detonator, it failed, for some reason which they could not explain, in many instances to ignite the inner part, hence the whole of the rock intended to be detached was not blown away, and cartridges were found unconsumed in the holes. From the account they gave, this appears to have happened just as frequently with dynamite as with tonite. Major Ford remarks that, of course, if the space between cartridges were filled with inert matter, as with earth, it would be quite possible that the explosive behind such inert matter should be left unfired; but in the Festiniog tunnel the men were excavating for the most part in solid rock, and the holes were bored horizontally. There was, therefore, no chance whatever of earth being in the holes—a supposition which could not by any possibility be admitted. But it is beyond question, the Inspector says, that cartridges have been constantly found in the holes after firing, and he thinks the circumstances must be thus accounted for. Although the fuses are arranged so that the shots shall be exploded as nearly as possible together, it is clear that the discharge is not by any means actually simultaneous. One snuff burns better than another, or is placed nearer the fuse, or one piece of fuse may be more easily burnt through than another; indeed, a rapid succession of shots is all that is hoped for. It is not unreasonable, Major Ford considers, to suppose that some of the shots which happen to go off slightly before adjacent shots may on occasion do more than the work allotted to them, and carry away portions of the rock, the destruction of which had been assigned to charges which have too tardily exploded; in short, that the effects of particular charges sometimes extend beyond what had been intended, this destroying portions of the rock in which holes have been bored before the charges in these holes go off. The rock would thus naturally not be broken off at the bottoms of the holes, varying lengths of which would be left, and in the portions of the holes thus left on the breast would be found parts of the charges. The cartridges contained in the parts of the holes detached, being in front of the blast which caused them to be so detached, would in all probability be fired by communicated explosion therefrom or from other holes, while the cartridges left in the holes would often remain unfired, being screened or cut off as it were from the effect of that explosion. This appears to him to be the only satisfactory explanation of the occurrence.

The fact, however, remains that parts of charges (whether of tonite or dynamite) are to be found in some of the holes after blasting, and as with the present system of firing no remedy can be devised, Major Ford thinks it is exceedingly doubtful whether the employment of electricity would entirely obviate the difficulty, great care is necessary to prevent accidents happening when the debris is being removed and new holes are being bored. The details of the accident have already been published in the Journal; it will, therefore, suffice to say that in the result Mr. Ford says that the cause of the accident appears to him to be evident—a cartridge of dynamite or tonite had, doubtless, been left in a hole fired on a previous occasion. Edwards and Thomas Davies in boring a fresh hole came across that hole, and the unexploded cartridge therein, and hence the explosion. As to the question who (if anyone) is to blame in the matter, the Inspector does not think there was culpable negligence anywhere. The jury found that the men were killed through drilling into an unexplored cartridge which they found was long ago, and not during the preceding 24 hours, left therein. With the first part of this verdict he quite agrees; it is under the circumstances a very proper verdict. But there was nothing in the evidence (as far as he understood it) to show when the cartridge was actually left in the hole, and the presumption is that, as the day shift was working on the same spot during "the previous 24 hours," and nine shots were fired, it was then left there. Moreover, as before stated, it must have been in the hole at that time if left there "some time ago," and it should have been discovered at the time the examination was made on the previous day. Had the jury said "the cartridge which so exploded was left in the hole by the negligence of some person or persons unknown," it would, in his opinion, have been the utmost they could have asserted to absolve the foreman and the two firemen of the day shift from blame, but they went further, and state in effect "that it was not so left by anyone during the previous 24 hours." They probably wished to show by this verdict that they considered if a proper examination of the place had been made the men could scarcely have failed to have discovered the hole in which the cartridge must have been at the time. As it appears to him, they failed to take into account that a stricter search would be required in the gutter than would be necessary in the breast of the tunnel, and that they were wholly free from blame, as the verdict would make it appear, does not, he regrets to say, seem to him to be the case.

PREVENTION OF COLLIERY ACCIDENTS—THE MINE DANGER INDICATOR.

SIR,—With a view of preventing the recurrence of those terrible explosions in collieries, permit me to offer through the columns of the *Mining Journal* my suggestion of a ready method of detecting the presence of dangerous gases in mines. My proposition is to provide in the various parts of the mine where there is any liability of accumulation of either fire-damp or choke-damp an apparatus consisting of a scale-beam suitably mounted on a bearing, and with the requisite protection from external injury. One end of the beam would carry a hollow sphere or balloon, as light as practicable and air-tight, whilst the other end of the beam would be furnished with an arrow-head pointer, so as exactly to balance the balloon when the apparatus is standing in pure air. At the index end of the scale-beam there would be a tablet, upon which would be legibly printed "Fire-damp," "Pure Air," "Choke-damp."

It will readily be understood that whilst the air in the mine continues free from deleterious gases the scale beam will remain horizontal, and the arrow head will point to "Pure Air." Should, however, the mine or gallery become charged with choke damp, which is heavier than air, the balloon will naturally rise, and the arrow head will move to "Choke damp." If, on the other hand, the mine become charged with fire-damp instead of choke-damp the balloon will fall below the horizontal, and the arrow head will point to "Fire-damp." By telegraph wires the information could be conveyed to any desired point, and as the proper officer would thus be apprised of the exact point at which the danger existed he could take the necessary precautions, whilst the miners seeing the "Mine Danger Indicator" would lose no time in proceeding to a place of safety.

I need scarcely discuss the value of an apparatus by which miners could at once ascertain the condition of the atmosphere of the mine in which they were working. It will, of course, be understood that if carbonic acid were present the index would point to "Choke-damp;" if coal gas were present, to "Fire-damp." I some time since published a letter pointing out the safety of the electric lamp in dangerous mines, and the advantage of miners being provided with the breathing apparatus, by which a miner could, in case of accident, work for two or three hours in a mine where, without it, he would, like the Blantyre victims, die in a few minutes; and at the present time that suggestion would certainly be worth reconsideration. The mine danger signal could by telegraphic wires be made to show in the manager's room the atmospheric condition of every part of the mine. I am certain by adopting these suggestions many lives would be saved.—168, *Piccadilly, W.* —— HENRY REECE, M.R.C.S.

COLLIERY EXPLOSIONS—THEIR CAUSE AND CURE.

SIR,—In spite of the application of science, and the accumulated experience of miners for centuries, the enactment of most stringent laws by the Legislature, &c., those dreadful explosions of carburetted hydrogen gas in coal mines continue to startle the public every year at intervals, and at the outset it is worthy of notice that the majority of these explosions occur in the winter months—that is, from October to March. The loss of life at Wigan from this cause has again called attention to those misfortunes, and a short dscription of the circumstances attending them by one who has had 40 years practical experience in the management of coal mines, and one who has also witnessed several explosions, and has also suffered severely from one, may be of interest, and may also lead to some practical conclusions likely to be useful in the future.

An ordinary observer might suppose that if the provisions of the Act of Parliament are fully carried out an explosion of gas is almost impossible, for the first general rule provides—1. "An adequate amount of ventilation shall be constantly produced in every mine, to dilute and render harmless noxious gases to such an extent that the working places of the shafts, levels, stables, and workings of such mine, and the travelling roads to and from such working places shall be in a fit state for working and passing therein." But we must consider that ordinary circumstances do not embrace or provide for contingencies; the difficulties to be met and overcome by the ventilating power are not constant quantities, but they are constantly varying from hour to hour and from day to day. As the workings advance daily new feeders of gas are constantly tapped, and the mine, or some part of it, may become at any moment unsafe if naked lights are introduced. Sometimes "blowers" are met with which emit enormous quantities of gas, and such is the amount of pressure this gas exists under *in situ* that the effect is very similar to what would occur if a pipe (say) 2 in. in diameter was opened, this pipe communicating with a very large gasometer.

We will suppose that it is necessary to establish a current of air amounting to 150,000 cubic feet per minute, and that this quantity of air is sufficient to ventilate the mine, and to render harmless all noxious gases under ordinary circumstances. In this case it will be necessary to erect a fan capable of giving a circulation of 200,000 cubic feet per minute at its maximum speed, and thus the speed can be accelerated as emergencies arise. Any increase in the gas given out, from whatever cause, would be noticed by the manager, and he would send orders to the engineer to increase the speed of his engines. Sudden and great falls of the barometer generally cause a great increase in the quantity of noxious gases given out, and it would be an excellent arrangement to place a barometer in the engine-room, so that the engineer could himself observe its position, and act accordingly, in accordance with a scale drawn up for his guidance. In fiery mines know to be so, the exclusive use of safety-lamps is absolutely necessary, any mixture of naked lights and lamps is much to be deplored, and it is likely in the end to bring disaster and ruin. Where safety-lamps only are in use, and all other matters are attended to, it may be assumed that the mine is really as safe as it is possible for human agency to make it, but then comes the important question of firing powder shots. How many dire accidents have sprung from this practice? It may safely be laid down as an axiom that when safety-lamps are necessary the firing of shots ought to be strictly prohibited. But then we come to the question of getting the coal down. It is difficult to get very hard coal down without the use of powder; it is, however, likely that ultimately this practice will be forbidden by a legislative enactment.

Here, however, we would draw attention to a very important point—that is, the class of men who are entrusted with the duty of firing shots; this duty is one of very great importance, as the men must determine whether the particular place where the shot is to be fired is free from explosive mixtures, and the only means he has of determining this is to try his safety-lamp. Now, this is really a very loose system; these men have a sort of practical knowledge of the appearance of the lamp when there is gas, and so forth, but they have no technical or scientific knowledge; they are taken from the better class of workmen, and have no idea whatever of the nature of the gases met with in mines, or of their diffusion, &c. They generally speak of the gases as sulphur, and there is no doubt whatever that the ignorance or carelessness of these men has in many cases brought on dire disasters. It is in vain to provide managers,

underlookers, &c., highly qualified to make all necessary general arrangements for safety if a number of ignorant men have the power to fire powder shots in any part of the mine where safety-lamps are used. It is also extremely desirable that shots should only be fired when the bulk of the hands are out of the workings, and some responsible person, ought really to have charge of this very ticklish duty—that is, an overman or a trained man at all events, who can ascertain what is the state of the workings at that particular time, not of any particular bord or stall, but the general state of the whole workings.

VIEWER.

THE BAROMETER, AND COLLIERY EXPLOSIONS.

SIR,—A good deal has been written on this subject of late, yet we think it may be useful to have some further discussion of it. It is, no doubt, correct that winter is most favourable for the ventilation of collieries; it appears, therefore, to be paradoxical to say that most serious explosions occur in winter, but this is not difficult to account for. In winter we have, of course, the greatest amount of natural ventilation, owing to the low temperature of the air on the surface, but the fact that in winter we have a constantly fluctuating barometer more than compensates for any advantage gained from the increase in the power of the natural ventilation. Where a powerful ventilation is established we do not suppose that the height of the barometer is of any consequence, it may be 29 in. or 30 in. if it is steady, that is, if it remains at or near any given point for any considerable time, but if we have a rising barometer for some time the effect of this will be to press the noxious gases up into the goafs and all empty space not ventilated by the currents of air, and if a sudden and great fall takes place these gases will pour out into the returns, and in some cases will put a stop to the pillar working when lamps are used. This shows the danger we have constantly to guard against. What we contend for is that so long as the barometer is comparatively steady the mine is in what may be termed its normal state, but those changes we have indicated change all that, and consequently increased vigilance is necessary.

If we look at the theory we have advanced we need not be surprised that so many serious explosions occur in the winter, and this theory is fully borne out by practice, or, rather, perhaps we ought to say that the theory is founded upon actual practice with respect to the numerous explosions that have occured when the barometer has reached the lowest point of a great depression it will certainly not be credited that those occurrences are merely coincidences. Mr. Wilson's dictum "That when they had a large quantity of gas previous to the barometer falling they had it also previous to its rising" has now being often quoted, but it appears to be a little ambiguous, we confess, that we have failed in understanding what it means. According to our views there will be an increased quantity of gas before the barometer falls, and after it has reached the bottom of the depression there will be a large quantity for a certain period until the normal state is again reached. The rising of the barometer can only have the effect of reducing the amount of gas.

Nov. 4. VIEWER.

GOVERNMENT INSPECTORS OF MINES, AND COLLIERY EXPLOSIONS.

SIR,—You no doubt in common with everyone else interested in colliery matters have seen the strictures recently passed by Mr. Macdonald upon our Mine Inspectors. His rabid denunciation of them all, and of everything they do, must be deplored by all sensible men. That there is a great deal to be done yet before our system of mine inspection can be called good must be patent to all, and there is much to be said on behalf of the view adopted by some of the working men's leaders that it is no use locking the stable door after the steed is gone.

The last Report of the Mine Inspectors shows that in North and East Lancashire Mr. Dickinson and his assistant had 371, in West Scotland Mr. Alexander and his assistant 343 and in Yorkshire and Lincolnshire Mr. Wardall and his assistant 549 mines and collieries under their several inspection. The total number of mines in the kingdom being 4385, and giving an average of 365 to each Inspector and his assistant. In Mr. Wardell's district it would be necessary to inspect two collieries each day for five days in each week, and a single colliery on the remaining day, in order that each mine may be inspected once a year. And can anyone suppose that an Inspector's visit once each year is any too often? I for one do not want an Inspector to relieve me of any part of my duties in managing the collieries under my charge, but I should certainly like a yearly inspection at least, whereas in the case of one colliery under my charge no Inspector has been to see it for four years.

What is the remedy for this? Must we have another batch of Inspectors, or is there a chance of getting more work out of the present ones? The latter suggestion is, I fear, impracticable, as our Inspectors on their own showing are greatly overworked as it is, and the fact that their lives (like clergymen who work so very hard) are so short proves now accurate their views are on this matter. With your permission I will next week draw attention to the system of electing Inspectors.

CARBON.

COLLIERY ACCIDENTS, AND THEIR PREVENTION.

SIR,—As the natural result of the colliery disasters at Pemberton and Blantyre, which followed each other with such terrible suggestive rapidity, a considerable share of public attention has been attracted to the discussions in technical circles anent the prevention of such catastrophes in the future. There are many reasons why those who are not directly concerned in coal mining should feel deeply interested in such a question. The mere contemplation of the fact that coal, like the Great Moloch of our modern industries, should insist upon a yearly sacrifice of human beings as a condition on the yielding up of this necessary treasure of the earth, seems to fix in the mind the idea that a proportionate number of fatal accidents form part and parcel of the operations of coal mining. In the aggregate the yearly death rate in this particular annually decreases; and, so far, this is comforting enough. But it is hardly complimentary to the boasted development of scientific working underground to find that really the most disastrous kind of mishap—the explosion—is as ungovernable as ever. At present, just as was the case 50 years ago, the miner descended the shaft with his life in his hand. Successive Mines Regulation Acts have done a great deal it is true, but they have not reduced to a mere calculation the handling, so as to speak, of a body of imflammable gas, which comes on the miner suddenly, unforeseen, and is at once most deadly and widespread in its effects. Although very different in detail, the accidents at Blantyre and Pemberton afford in each case a remarkable instance of what we refer to. In the first case the mine was supposed to be devoid of gas, and the ordinary precaution of safety-lamps was, at least in part, not appealed to. But on a certain Monday morning the men were engaged in clearing out an old drift, and in removing the remaining masses of coal left as supports, the timbering, and the goaf or rubbish packed into the roof and sides to leave no crevices for the lodgemnt of small quantities of gas which might possibly be given off. Suddenly an explosion occurs, destroying as usual in its terrible course all traces of its origin. No one can tell where the gas came from in such a large quantity, though we think that the scientific evidence at the enquiry will support our view that the imperfect timbering and packing of the drift had afforded space for the collection of small settlements of dangerous gas, and when these were disturbed it was like opening a gasometer in the presence of a naked light. All that we can say for a certainty is that the moment the gas gave off the catastrophe occurred. Turning to Pemberton we find that an outburst takes place in the midst of the ordinary day's employment, but in a seam which is notoriously fatal, and in which it is said exists gas of a quality which acts too quickly even on a Davy lamp. Putting aside the question of lamps or candles then, we find ourselves confronted by the crude problem, founded on the experience which tells us that when gas of given quantity or quality escapes the miner at the all important moment has no protection.

Then what is to be done? We think there can be little doubt that early legislation on this most important accident question will be forthcoming, but to be really useful it is difficult to see how the matter can be approached in any old-fashioned way. A correspondent of the Lancet propounds an elaborate system which, by the aid of small elastic pipes carried into all the workings of the pit, and connected with lighted transparent chambers under the care of a watchman, is intended to act as a warning medium to every part of the mine. This appears to be a kind of revival of the old Fire-Damp Detector, which it was attempted to introduce into our mining clauses, and since the late explosions is again advocated by Lord Kinnaird. We have further heard of practical schemes for supplying the colliers with breathing tubes somewhat similar to those used by divers, the same to be continued to the lamp. All these and other more or less practical suggestions only go to prove that the engineering mind, and that of the public too, are being directed to the real necessity of meeting the gaseous outburst on its own ground, as it were, and weathering it, if possible, as a good ship will a white squall in the Southern seas. Whatever may be done, however, the public should remember that it must necessarily be in the shape of a restriction. There is already abundant evidence to prove that a coal mine is not a very profitable investment. Indeed, Sir George Elliot, who has just been consulted by Lord Beaconsfield on the very point we have taken up, stated not long ago that the average profit on the whole of his Northern collieries did not exceed ¼d. per ton. Compared with other industries, such as the manufacture of gunpowder, dynamite, or gun-cotton the profits are infinitesimal; and the further establishment of even necessary restrictions underground must end in advancing the prices of coal.

J. H. R.

IMPROVED PROCESS IN GETTING COAL.

SIR,—Experiments were conducted at the Rainford Collieries, belonging to the Rainford Coal Company (Limited), on Monday, with Messrs. Macdermott and Elliott's Patent Multiple Parallel Expanding Wedge. The experiments were highly satisfactory to the workmen, also to the officials. The first trial with the wedge was in a face of coal which was under-cut 5 yards in length and 1½ yard in depth, the coal having one loose end and one fast end. A shot-hole was drilled 2 ft. from the fast end, and 4 ft. deep, with Macdermott's Coal and Rock Perforator, but the wedge will act equally as well when a hole is bored with the ordinary coal drill. The time occupied in drilling the hole and wedging the coal down was 24 minutes, and cleared the under-cutting much better than if powder had been used and gave a greater amount of large coal, the whole mass—weighing about 10 tons—was brought down all in large coal. The next experiment was in a working place with two fast ends, the hole being drilled as before, the under-cutting being 3 yards in length and 1¼ yard in depth; this experiment passed off as successful as the other, with the exception of it not having such a large area of face to heave at. The whole time occupied in drilling the hole and bringing the coal down to the floor was about 27 minutes, the estimated weight of coal being over 2 tons. It may be but fair to state the longer the face of coal and greater the area is the better will be the results obtained from the wedge. The wedge is very simple in construction, and is perfectly safe, which cannot be said of some of the late patent wedges, which require such an enormous amount of pressure to burst the cartridges and bring the coal down, whereby sometimes it bursts some other parts of the machinery, and causes great danger to those using them.

W. WARDLE, Manager.

Rainford, Nov. 6.

THE "RELIANCE" AIR COMPRESSOR.

SIR,—Your valuable Journal of last week I notice has a space devoted to this subject; and as it is one of such vital importance and interest to the engineering and mining interest, I take the liberty, with your kind permission, of making a few further remarks upon that most interesting and perfect piece of mechanism. On a very careful and minute examination of the construction of this compressor, it will be clearly seen that Messrs. Hathorn and Co. appear to have overcome the many difficulties experienced hitherto in all other compressors offered to the public, as will be seen from the following:—

1.—The entire absence of springs to the air valves must be a decided advantage.

2.—Each valve having a free and independent action, uncontrolled by any mechanical appliance whatever either to open or close them, shows that the valves are very accurate and sensitive in their action.

3.—The simple but well executed arrangement of the inlet valves, with their central guides and recessed inlets, receive the air in the inter or arrangement of the valves themselves, thus dispensing with the crooked passages found in all other air compressors.

The whole construction of this neat and compact machine renders it highly efficient, and too great publicity cannot be given to this fact, more especially as the mining community are at last showing some disposition to give rock-drilling machinery the attention that it deserves, for there is not the slightest doubt but that by the introduction of rock drills and air compressors into mines, harbour works, tunnels, quarries, &c., a first-class return would be made for the additional outlay of capital. This, I am sorry to say, is not the case now in many instances, simply because this class of machinery is not used to push the works forward, and produce ores at a much cheaper rate than can possibly be done by the old style of hand labour. Thousands of pounds have been and are being wasted by the total ignorance of mining men in general of machinery. Good mines are now standing still which might be at work and paying fair dividends if machinery like the "Reliance" Air Compressor and Drills were put to work in them. Again, this compressor, in its compact form and great power, can be utilised for more purposes than driving rock-drills, such as working pumps and hauling engines underground, and last, but not least, as a perfect ventilator of mines.

Mechanical ventilation has not made much headway, and those interested in mining would do well to give this simple and effective machine their attention, and a great boon would be at once given to the poor miners who now work in constant dread of explosions, &c. I understand that some excellent diagrams can be seen at the offices of Messrs. Hathorn and Co., the inventors, taken from this compressor showing very great results for the power expended.

It is evident that as far as power is concerned all attempts hitherto made have fallen very far short of the present production of practical results, and the idea that troubled the earlier inventors has now exploded. Air compressing seems for a number of years to have hung upon the hinges of theory, but recently good sound practical men have grappled with the difficulties, and from time to time overcame some of them, but Messrs. Hathorn and Co. seem to have discovered the missing link in this important machine of theirs, and it is to be hoped that they will give every facility to mining, as well as all other engineers and scientific men, to see and fully prove their highly efficient compressor, and I have no doubt but that they will be amply rewarded for their ingenuity by the large patronage that will be given them.

A VISITOR AT THE LATE TRIAL.

London, Nov. 7.

THE TIN MARKET, AND ITS PROSPECTS.

SIR,—I send you extracts of a letter received here on Monday last from one of our old and experienced tin miners in New South Wales, from which I think we may look for a far greater rise in the price of tin than a short time ago was considered at all likely.

The writer communicated in July last that "the mines in that colony were not returning one-third the quantity of tin they had returned in 1876, nor never would again."

"Great Britain Tin Mining Company (Limited), Vegetable Creek, New South Wales, Sept. 1.

"DEAR SIR,—At this time the tin mines here are very poor, and it is likely that our mine will shut up.

"The deepest part of our mine is 10 ft.—that is, 8 ft. at top, and 2 ft. of tinstuff, yielding 25 lbs. of tin to the ton, which has cost us to produce 30l. per ton of tin, and 10l. carriage to Sydney, where it is worth 42l. That price is no use at present, nor is any price less than 60l. per ton enough for our Australian mines.

"Since writing the above I find that our mines are to be shut up, together with all the tin mines in this part of the country—so that I shall soon leave for Sydney. You will not be much troubled with tin from here in 1878.

"I was in Queensland in May last in the tin mines for three weeks, and found them all alike—very poor, producing altogether more than half short of the quantity produced in 1876, so you will not be very much troubled with tin from there next year. There may be good lodes found, but it will require a very considerable amount of capital to work a mine here.

"With this great falling off from all the Australian tin-producing districts I hope the Cornish mines will live again."

The writer of the above sent a very long letter descriptive of the manner in which the tin is found, mined, washed, &c., which probably many of your readers are pretty well acquainted with already, and to others would not, perhaps, be very interesting; but I thought the above extracts would interest many who are connected with Cornish mines.—*Redruth, Nov.* 7.

W. TREGAY.

LEAD MINING AND SMELTING.

SIR,—Remarks in the Journal, and public talk, hint that smelters do not in these days pay a fair price for lead ore. Shareholders urge directors to smelt their own, stating that it is a very simple process. I think it would interest many who like myself have invested in lead mines, and are, owing to present low prices of ore, waiting for dividends, to know how this is to be done? What would be the probable expense to fit up a small smelting works for a mine producing (say) 100 tons per month, and would such a scheme be profitable? I hope some of your correspondents will ventilate the question.—*Nov.* 8.

NO DIVIDEND.

CALCULATING THE VALUES OF LEAD AND ZINC ORES.

SIR,—Will some kind reader of the *Mining Journal* inform me how to calculate the value of a parcel of lead ore of any given percentage from the market value or standard of the metal? For instance, taking the price of pig-lead to be 20l., what would be the value of lead ore of 60 per cent. (not taking into account the silver contained)? It is evident that if there were no loss in smelting and there were no returning charges, the value of such ore would be (20l. × ·60 12l. per ton. What are the returning charges and other deductions made by the smelter? I should also be glad of similar information respecting zinc ore. What would be the value of 40 per cent. blende, for example, when the price of spelter is 19l. 5s. per ton?—*Nov.* 5.

EIN BERGMANN.

NEW CALEDONIA, AND ITS MINES.

SIR,—I have received a copy of a letter written by an Australian miner, which contains some interesting particulars respecting the mineral wealth of New Caledonia. As this is a new district, and one respecting which little is known, I have made an abstract of the information conveyed, considering the matters referred to will prove of interest to your readers generally. Noumea, the port of debarkation in New Caledonia, is about four days' sail from Sydney Heads, and the narrator first sighted the picturesque coast of New Caledonia on a warm summer morning in the middle of December. He remarked that the dim outline of the mountain presented a grand appearance, and very shortly afterwards the sea could be seen for miles in length breaking over the great coral reef that surrounds this, and, indeed, nearly all the islands of the Pacific. It appeared to landsmen that there was no opening; but after awhile they could see a break in the reef, and about a couple of miles inside stood a lighthouse that for height and symmetry, at any rate, is not surpassed in the Australian colonies. From this place came a pilot, who took us into Noumea Harbour, arriving there about midday. I had forgotten to say, he continues, that we had several notabilities on board—the Commissioner General from France and several other officers, and on our dropping anchor the wonders of a new country began to show themselves, as boat after boat came off from shore, containing officers and friends, the boats being manned by lusty-looking blacks, with immense heads of yellow-looking hair, of the colour and substance of a cocoa-fibre door-mat. I could not for the life of me reconcile my mind to the fact that niggers had carroty hair, and I soon found out that this colour was produced by washing their heads in lime water. The town of Noumea, the capital of the island, is situated on the eastern shore of a beautiful bay, the view to the seaward being almost shut off by two or three islands, the largest of which, named Ile Nou, has several thousand convicts on it. The town itself is surrounded by a lofty range of barren-looking hills, from which a good supply of beautiful water has recently been procured. The town is very nicely laid out in streets standing at right angles to each other, on the four cardinal points of the compass. The buildings are chiefly of wood, which fails to set off the place to its best advantage; but from the Semaphore on the top of one of the nearest hills the governor's house and other large dwellings, surrounded by the brilliant foliage and bloom of tropical plants, produces one of the most delightful effects I have ever looked upon. The town is almost supported by the Government, and as a consequence few people but soldiers and convicts are found in the streets.

From Noumea he proceeded to Onegou, at the north end of the island, where the great Balade Mine, the management of which he was about to assume, is situated. On leaving Noumea they steamed to the southern extremity of the island inside the reef, and anchored the first night at the Government station of South Bay, where they have a steam saw-mill at work, the shores of the bay being studded with good straight useful timber. Leaving this place on the following morning, they observed that the country became far more barren, the hills being covered with iron ore, containing about 50 per cent. of metal, the supply being unlimited. He found the coast thickly and deeply indented with good sheltered bays and inlets, some of which the steamer used to anchor for the night. They anchored the third night at Canala, the shipping port of some of the most promising nickel mines; and having obtained permission from the director of one of the mines to look through it, and having walked and been carried (for a man actually did carry him across a river) three or four miles he arrived at the "Boa Kain," but was speedily informed by a couple of Cousin Jacks (who had evidently been keeping up New Year's Eve) that he could not see the mine as he was a practical man. Perhaps he had no right to think such a thing, but it did occur to his mind that things might not be looking very "keenly" in the "bal."

On the following morning they started again at daybreak in a torrent of rain, and anchored that night at Ouilion, a shipping port for the nickel mine of that name. Here they found a ship loading nickel ores for France, and a paddle-steamer running up and down the river with punts, conveying the ore from the wharf to the ship. This mine is yielding about 200 tons of from 10 to 12 per cent. nickel ores per month, and to show the market value of the concern he states that one-fourth of the mine has recently changed hands for the sensible sum of 28,000l. From this point the land became more fertile, and large streams of water could be seen for miles issuing from the tops of the mountains, and falling in grand cascades into mountain gorges or trickling into the sea. The next day he reached the port of Pam, situated at the mouth of the River Diahot, and it is from this point that the produce of the Balade Copper Mine is shipped. He was met on board by the then administrator of the company, and after taking a parting glass with the master of the steamer, proceeded in the river in a boat pulled by four black boys, and arrived at Caillon, a distance of about 20 miles from the sea, at 9 P.M. This is the nearest point of the river to the mine, and it is here that the produce is brought at present by bullock teams, and conveyed in punts by a steamer to Pam. A horse-tramway is in course of construction from the mine to this place, and is now workable within about a quarter of a mile from the river. On the following morning he started for the mine along the tramway, and lost no time in setting about his ordinary duties.

With regard to the geological formation of the island, he writes that so far as he has seen there is no sign of volcanic agency in the north end of New Caledonia, and the strata in which the copper is found, instead of being of recent formation, is one of the oldest that he has seen in the colonies. On his arrival at the mine he became at once deeply impressed with the greatness of its mineral wealth. The ore was first discovered in the bed of a creek or mountain gorge, and hundreds of tons of rich oxides and other rich ores were exposed to the open air probably thousands of years before the eye of white

men beheld them. At the time he wrote he had been six months in office, during which time they had raised, dressed, and sampled 2500 tons of ore, estimated to contain from 18 to 19 per cent. of copper, while the cost-sheets for the same period have not reached £2000 per month. The number of hands employed by the company is 280—150 whites and 130 blacks. Of the climate of New Caledonia he speaks in the highest terms. During the six months that he has resided on the island there has scarcely been any sickness, and the rainfall has not exceeded that of South Australia. The mine has yielded several batches of miners from the Moonta district already, and no doubt is entertained that as the operations are extended the number of miners who will find profitable employment there will be largely increased.—*Sydney, Sept.* 30. CORNUBIENSIS.

THE EXCHEQUER GOLD MINE.

SIR,—The extraordinary and persistent silence on the part of the officials of this company as to its present position and future prospects is something marvellous. It is, however, somewhat cheering and satisfactory to learn from other channels that through the benevolent generosity of some few gentlemen Mr. Sewell has been commissioned to proceed to the mine, where he now is (at their expense). for the express purpose of making a thorough and searching inspection of the mine, and as his opinion is already known, and has been publicly expressed in the belief that "riches abound in this mine in depth," the shareholders should not feel surprise if the forthcoming report, which is expected in a few days, should be eminently favourable, and be a confirmation of the opinion already expressed that vast riches abound in this mine, especially in depth.

It has already been whispered to the favoured few that large blocks of ore have been taken out rich in mineral and assay, and no doubt Mr. Sewell's report will give full particulars of the value in dollars per ton of ore. The shareholders will, of course, receive a copy of the report, and thus be able to judge for themselves. It is likewise reported that Mr. Sewell has made things pleasant in a financial point of view in respect to claims; it will also be satisfactory to learn whether the reports and statements made by interested parties were justified or not, and more especially as to the future prospects of the company. The shareholders should, therefore, be on the alert as to a very probable reaction in the value of the shares, for in the event of the report being a favourable one, the shares must inevitably rise with the slightest demand for them, and it is well known that they are largely and firmly held by a respectable consistency, at present they are nominally worthless.

London, Nov. 5. A SHAREHOLDER.

When the directors and a few of the shareholders subscribed a special fund to send out Mr. Sewell to the Exchequer Mine to report on it, and to aid in its development, as well as to assist the manager in effecting a more favourable settlement of the company's affairs generally, it was understood that Mr. Sewell's reports should not be made public except by the sanction of the subscribers. So far Mr. Sewell has been eminently successful in the financial arrangements, and it is understood that he recommends the continuance of the explorations of the mines. The subscribers have received every form of information.—ED. *M.J.*]

FLAGSTAFF MINE.

SIR,—I do not think the complaints of your various correspondents with reference to the want of information respecting this mine are well founded, for being desirous of ascertaining whether the report in the Journal of last week was true, I wrote a note to the secretary requesting to know whether the directors had received any information from Salt Lake confirming this report, and received from him the following reply, which is so interesting to the shareholders that I give it to you in full:—

"*Flagstaff Silver Mining Company of Utah, Winchester-street, Nov.* 8.

"DEAR SIR,—In reply to your note just to hand I have pleasure in informing you that a letter was received on Tuesday evening of this week from our manager at Salt Lake largely confirming the reference made in Saturday's *Mining Journal* respecting recent rich ore discoveries in the Flagstaff Mine. The ore has been struck by the 5th, 4th, and 3rd levels, and in the last-named level, to use the manager's own words, "was the richest ore he had seen in the mine, and was opening out very largely, being a rich yellow carbonate." He adds that the foreman regards these several discoveries as but different points of one great deposit.

"F. W. Snell, Esq. A. A. DE METZ, Secretary."

I should not have troubled you thus except for thinking that the whole body of shareholders are entitled to the information, which is of such importance, and which they would not probably otherwise get. FREDERICK W. SNELL.

George-street, Mansion House, Nov. 9.

RICHMOND MINING COMPANY.

SIR,—In reply to different letters concerning the Richmond Mine, in last week's Journal, I have to state in respect to the writer who signs "D." that, excellent as his remarks for the most part be concerning the Eureka Company's lawsuit *v.* Richmond Company, nevertheless, in his remark on the third point of decision, he is under a great mistake in supposing that the ground in dispute lies to the south-east of a certain designated line to the plaintiffs', and which the defendants had formally surrendered—for the ground in dispute lies far away north of the above designated line, and which an inspection of the map of the Richmond Mining Company will clearly show. The law proceedings will now entirely commence afresh, and fortunately out of California, where the plaintiffs held their patent; and, considering all things agreeable to facts and justice, there is every reason to presume that the Richmond Company will come off the winners in the coming last trial.

In reply to one who signs himself "A Richmond Shareholder," I beg to state that the figure 50 per cent. profit is rather too high a statement, as he himself supposes, but a fraction over 40 per cent. profit is the truth. As to the claim of 500,000*l*., once represented in the newspapers as $500,000 by the Eureka Company, it is a myth got up on the part of "bears" on the Stock Exchange. I have been informed that the profits from sale of ore on the debateable portion of the property has been a mere cypher. Were it not for law proceedings a damper to the welfare of any company, for the old saying of the oyster and shell will be ever repeated, the Richmond Company's shares with its late incomings would be low at 15*l*. premium on the 5*l*. paid. The highest price they ever attained to on very much profits and far less valuable virgin ground opened (15*l*. on 5*l*. in full paid; but the real net value was 11*l*. premium on 2*l*. paid—the Stock Exchange "bulls" having succeeded in pushing up the shares just 2*l*. premium above the real net value of the mine. VERITAS.

MINING IN MONTGOMERYSHIRE.

SIR,—Your correspondent "Cymro" may be right about the boundary of Hyddgen, which is I know a very extensive sett. I have been in the boundary adit he alludes to, and know it to contain a vast mass of mundic for many fathoms in length, and no doubt after this will be found an immense deposit of copper. I fear it will be very hard to find this lode on the immediate east of the sett (in Montgomeryshire) owing to the bogs. I am most happy to endorse all "Cymro" says about the roads, which seem to have been carefully laid out to cross every possible hill and valley. Let us hope, however, for such an extensive development of mineral wealth as may lead to the construction of short mineral lines of narrow gauge railways, which would save not only the miners but the farmers, as there are thousands of acres of good land in the valley of Hyddgen well watered by rivers, only waiting for the improving hand of man to yield bounteous harvests. I am sanguine enough to hope to live to see a prosperous village somewhere at the western foot of Plynlimmon. There is no doubt that every encouragement will be given by Wynnstay and Gogerddan.

If your correspondent has trespassed into Cardiganshire, perhaps he may be permitted to remark that an extraordinary lode is now to be seen close to the Lechweddmawr river, where there is one of the most wonderful gossans ever seen, in a lode upwards of 100 ft. in width. This lode is to be traced through Llechweddmawr farm, or rather sheepwalk, into the southern part of Hyddgen sett (but it has not been tried there), and continues its course and bearing due east to the Van Mine, but I do not say it is the Van lode. At the same time I do not see why it should not be, as the bearing of that lode is due east and west. At all events, there can be no doubt as to its being a champion and masterly lode, and I know that Prof. Warington Smyth has expressed his astonishment that nothing has yet been done on it. The discovery of such a rich course of copper under similar gossan at Esgair-fraith will, doubtless, lead to something being done, especially as there now appears to be some little life again in home mining.

I have started this week on a tour through the Wye Valley, St. James Brook, and the neighbouring mines, and hope to be able to give you some account of them in next week's Journal. J. D.

Machynlleth, Nov. 6.

ESGAIR-HIR AND ESGAIR-FRAITH MINES.

SIR,—A great deal has been said and written lately with regard to the good discovery of copper ore at the above mines, and I would beg a small space in the Journal to add a few words on the subject. Now, while I rejoice that such a discovery has been made, I regret, with others, the manner in which this company has been brought out: 100,000*l*. is too much capital for any mine in this county, and, I consider, is out of all proportion to the value of the mines under notice—500*l*. made the great Old Goginan Mine. The rich and lasting Lisburne Mines were discovered and developed with 7500*l*.; the Van Mine, with its great and wonderful store of riches, was purchased for 60,000*l*., and it did not require the horn to be continually blowing about connection with the Bassets, and great gos an deposits, to make these successes real legitimate successes, and it is quite certain this mode of procedure will not add to the reserves or sales of ore—the true test of success. Those acquainted with the history of Esgair-hir and Esgair-fraith know that the discovery advertised so widely is not the first made at these mines; large returns of ore were made hundreds of years ago, and in more recent times when they were worked under the style of Welsh Potosi, they had sufficient ore to make a legitimate success if only ordinary economy, care, and skill had been bestowed on them. The Cambrian Company possess a fine property, but even 10,000*l*. judiciously expended on its development may be considered ample to make it all the success it has capacity for.

Capital is required to develope the great mineral resources of Cardiganshire, but administered in more homœpathic-like doses than 100,000*l*. This latter will have the effect of an emetic with the public as far as Cardiganshire mining is concerned, whereas if some of the scores of promising concerns to be had for a few hundreds, were carefully selected and thoroughly explored with (say) from 5000*l*. to 6000*l*., under thoroughly practical honest and hardworking management, Cardiganshire mining would be more in favour than it is, and there would be fewer miners seeking employment. One hundred thousand pounds will explore in our Cambrian rocks from 10,000 to 20,000 fms., and who can tell the wealth that would be unearthed and the immense good done as the result of such exploratory work equal to 17 miles in extent? more, immensely more, than by blowing the horn about gossan, &c.

ONE WHO BELIEVES THAT MINING IN CARDIGANSHIRE WILL PAY.

DYNIN SLATE QUARRIES.

SIR,—In reference to the notice of these quarries in last week's Journal, and the remark as to "no mention of what ordinary share capital has already been expended by the company issuing the debentures, who the directors or officers are," &c., we beg to inform you that the works are not the property of any public company, limited or otherwise, but are being opened and worked by a private firm, who rather than form a company, or admit more partners, seek to obtain further capital by issuing mortgage debentures, with coupons attached, paying at the rate of 10 per cent. interest, half-yearly. This is by far a better investment than ordinary shares, the proprietors, whose names are appended, being individually responsible. RICHARDSON AND CO.,

170, *Mansion House Chambers, Nov.* 7. Agents for the proprietors.

MANGANIFEROUS ORES OF DEVON.

SIR,—I see in last week's Journal that Mr. Sutton stated at the luncheon, on the cutting of the first sod for the Neath Harbour Works, when proposing "Prosperity to the Mining and Manufacturing Interests of the District," that it was necessary that steel should be made from foreign ores, as those of our own country were of an inferior description, and more costly. It would appear that Mr. Sutton is not aware that there is large quantities of very rich ore, suitable for the making of steel, not more than four hours' voyage from Neath, instead of four days; and there is no doubt of its being practically proved that it can be delivered at a much less cost than foreign ores before these works are completed. The Great Western Railway Company will very soon (if reports be correct) extend the present Devon and Somerset line to Combmartin, and they are sufficiently well acquainted with the district to run it through the parts that will give the greatest traffic, which there can be no doubt is that already levelled, from Castle Hill Station northward, taking the run of the River Bray to Brayford and Challacombe, and thence to Combmartin, which will open up this rich district, causing a large mineral traffic, which will go on increasing as the short branches from Exmoor, &c., are made to it, as well as taking the very large return coal traffic, thus adding the connecting link to the hitherto much needed increased receipts of this line.

J.

CATHEDRAL MINE.

SIR,—If the old shareholders will now come forward and join the purchaser, taking their proportion in a small capital to re-work this mine, it need not be lost to the late proprietors. To have raised further capital before the liquidation of the late company would have been useless, as having debts and claims on it to the extent of about 5000*l*. any sum short of that amount would have been valueless for mining purposes; 5000*l*. (or perhaps less) raised now would form a good working capital, and pay for the purchase also. Your correspondent of last week, signing himself "A Dissatisfied Shareholder," that he is so is natural—can there be any member of the late company otherwise? But mining adventurers, as a rule, do not give way to despair, or cry over spilt milk. There is evidently a good mine. It is purchased for a small sum, and wants but little capital to develope. The old shareholders should join in getting this, and look after their own concerns better for the future.

Nov. 7. HOPE.

CATHEDRAL MINE.

SIR,—In reply to the enquiry of "A Dissatisfied Shareholder" in last week's Journal I believe the mine has been taken from us, having been sold by the Stannaries Court to a Mr. Luby, one of the original directors, and he is endeavouring to resuscitate it. The directors made a call upon me to pay the last instalment on the new issue of shares referred to by "Dissatisfied Shareholder," and I paid the amount just before the collapse of the concern. He has thus far been less unfortunate than I was. I cannot, however, understand how he escaped this call. Having paid a considerable sum into this adventure I shall be glad to know that I am right in believing that the mine has passed away from us. Perhaps some of your readers who are fully informed on the subject will say.

Nov. 6. ANOTHER DISSATISFIED SHAREHOLDER.

PENSTRUTHAL MINE.

SIR,—A mine situated between two such historically rich enterprises as Buller on the north and Tresavean on the south, and whose lodes run parallel with Highburrow lode in Penstruthal, must, it would seem, have a great future before it. Captain Teague has expressed his opinion that a great similarity exists between Tresavean and Penstruthal Mines, the ore in the former having been made in the granite, with a gentle declivity as the killas is reached. It is precisely so in Penstruthal Mine. There are over 300 fathoms from Highburrow shaft to the junction of the granite killas eastward. The levels are driven cheaply—as low as 2*l*. per fathom being accepted. The wondrous profits made in three or four different attempts to work Penstruthal as a copper mine ought to be remembered, and few mines of such magnitude as Penstruthal are so economically worked. The mine is a dry one, and the vast reserves of tin ground laid open must quickly augment the returns now that tin ore commands such a good and rising price. But it is as a copper mine that Penstruthal must claim the first attention. Daily discoveries of importance are expected in this metal, and from its situation this event must shortly prove that the present price of the shares is much below their value. A CORNISH MINER.

JOINT-STOCK BANKS, AND BRITISH MINES.

SIR—It is an admitted principle of action "in all well informed banking circles" to invest in the shares of "ons" joint-stock bank, to deposit your spare money with "another," and to conduct your ordinary trading business with a "third;" you will then, in the case of a collapse with either, have your resources with the others at command; but he or they who embark the whole in one adventure must sink or swim with its success. So is it practically with mining adventures, and trading concerns in general. But in respect to a mine, in case of disaster the Mother Country is all the better off by the whole products of the chambers of wealth discovered and wrought, while the nation is no poorer for the money lost in the search and realisation. The minerals or metals have been capitalised at home, or their money value received and spent in labour, merchandise, and material—the difference between "costs and products" is simply circulated; the loss of individuals is no national loss, but, on the contrary, the world grows richer from the employment of the capital, and the riches of the earth realised through its use. Ten years ago we selected the Van, Great Laxey, West Chiverton, South Caradon and South Condurrow, and these mines are still sound and profitable investments, and equal to any joint-stock bank as mediums of investment for the profitable employment of capital.

Joint-stock banks are at times profitable gigantic pawnbrokering concerns—they do not do much for the agriculturist or the miner, yet they know full well that the cultivator of the soil and the explorer of the earth find and produce all the material wealth which sustains animal life, and create all the trade, commerce, manufactures, factories, shipping, railways, finance, insurance, gas, and every other description and character of business in the land and throughout the whole world. There are risks associated with mining, but not more so than with banking, as it is still termed. Who can point out more progressive properties than the Cambrian, Esgair-fraith (with a copper lode at three pioneer points valued at 100*l*. per fathom), Hultafall (a lead and blende mine with upwards of 1000 tons of ore at surface, and the machinery already shipped to the works), Leadhill, producing 250 tons of lead a month; Great Laxey, paying regular quarterly dividends (30,000*l*. annually); Van, 48,000*l*. a-year; Melianear, Grogwinion, Tyn y-fron (70 to 80 fms. of rich blende and lead at the adit level). We have inspected this day the latest specimens of ore from the forebreast in the adit level eastward. This, at the ordinary estimate, is fully 1 ton of lead to the fathom, while the amalgamate of the lode is made up of blende, crystallised quartz, carbonate of lime, and all the constituents essential to a large and profitable deposit of mineral wealth in depth. It may be added that an unusually large and promising gossan exists in the back of the lode. There are other acknowledged sound prospective properties? It would prove interesting to have a statement of the commitments of joint-stock banks to foreign loans—*i.e.*, Peruvian, Turkish, Egyptian, Russian, and other rotten stocks—bonds, simply promissory notes of bankrupt communities who ensconce themselves within the irresponsible coils of national conventions, with buildings, railways, gas, water, shipping, trading, manufacturing and engineering concerns. Then compare the grand total with the mining industries, remembering that the former sprung from agriculture and the material value of our iron, coal, copper, lead, blende, tin, and other metals, minerals, and earths. Such traders as Colley and Gladstanes could raise millions on credit, though rotten as South American Republican bonds; yet the hard-working and industrious miner cannot borrow in the open market—the legitimate sphere of finance—one iota on his mines, the material source of England's great and glorious commercial position in the marts of the world, and of her vast riches and wealth at home.

The latest advices from the Cambrian Mines, in referring to the copper lode at the Esgair-fraith, speak of the ore continuing north in cutting down the lode in the shaft for casing timber, cutting plats, and making room for penthouse, skip and ladder road, and for permanent drainage, it is evident now that the ore holds good up behind the shaft sunk from the 10 to the 23, hence there will soon be two other points of operation on ore in the 10 fm. level. There is now at the surface some 100 tons of rich copper ore, ranging from 10 up to 20, and even over 30 per cent. of metal. The lode at the shaft is not all stripped down, but for its present width it is undervalued at 150*l*. a fathom, while the 23, both east and west, for the width of the ends is valued at 100*l*. the fathom.

Bicton Consols Silver-Lead Mine, in Cornwall, is introduced at a favourable moment to revive legitimate mining enterprise. The company's concession embrace the lands stretching for 1½ mile eastward of the Caradons, which combined have yield over two millions of copper ore. The Bicton lies due north of the Menheniot Silver-Lead Mines, and is traversed by the lodes of Trelawny, Mary Ann, and Treweatha. There can be no stronger or more favourable analogy of profitable surrounding mines than evidenced in this case. The stratum is congenial for the yield of silver-lead in bulk, while the backs of the several lodes are rich in gossans, interspersed with considerable mixtures of ores. R. TREDINNICK,

Dealer in Stocks and Shares.

Exchange, Coleman-street, London, Nov. 8.

[For remainder of Original Correspondence, see to-day's Journal.]

PERKINS BEACH LEAD MINE COMPANY (Limited).—Sir. H. James, Q.C., and Mr. Bradford supported a petition on behalf of the company for a winding-up order. The petition was supported by an affidavit stating that the company was wholly insolvent, and unable to pay its debts. Mr. Grosvenor Woods, for a creditor, strongly supported the application for a compulsory order. Mr. Caldecott said that a meeting of shareholders had been held, and a voluntary winding-up resolved upon. The Court would have regard to the wishes of the company rather than of the directors, and would meet the case by ordering the winding-up to be carried on under supervision. The Vice-Chancellor said that generally the wishes of the shareholders would be considered, but where a company pledged themselves that they were insolvent, and a creditor asked that a winding-up order should be made, the Court must adopt the latter course. Mr. Russell Roberts, for the Sheriff of Shropshire, asked for his cost of being in possession for a month. The Vice-Chancellor said there was no one upon whom the order could be made at present, but an application might be made to the official liquidator when appointed.

NEW SOUTH WALES—COAL TRADE.—The output of coal from the Hunter collieries for the four weeks ending Sept. 21 amounted to 108,826 tons, of which 21,767 tons were shipped to Sydney, 2037 to the Clarence River, 27,841 to Victoria, 4144 to South Australia, 889 to Tasmania, 10,336 to New Zealand, 1219 to Queensland, 12 309 to China, 2383 to Mauritius, 4745 to the East, 15,137 to San Francisco, 1471 were taken by steamers, and 4225 tons used for home consumption. — *Sydney Morning Herald*, Sept. 21.

Meetings of Public Companies.

UNITED MEXICAN MINING COMPANY.

The ordinary half-yearly general meeting of shareholders was held at the offices of the company, Great Winchester-street Buildings, on Wednesday, Mr. J. W. WILLIAMSON in the chair.

Mr. W. M. BROWNE (the secretary) read the notice calling the meeting, and the directors' report was taken as read.

The CHAIRMAN said that, at the eleventh hour, he had been called upon to take the chair, in consequence of the ill-health of his two senior colleagues. Under those circumstances, he had not prepared any speech to make to them, and perhaps it was not necessary to do so, inasmuch as, in the report, the directors always laid everything in detail before the shareholders. They would perceive that the mine of Jesus Maria was now out of the company's hands. That mine had been worked by the company for a very long period; lately the expense seemed more than it was desirable to incur, and from time to time the directors had informed the shareholders that they would take the step which they had done with respect to the mine. The principal point which was the object of this company was the new concern. Mr. Furber was in a poor state of health; he was still in this country, and desired the Chairman of this meeting to say that he would meet any directors or shareholders by appointment at the office, and explain anything which they would wish to know. In the new concern they had arrived at that point which was considered most important, and they must push on, and by cross-cutting on either side develope the property. Mr. Furber had great hopes of the result. Mining was more or less uncertain, but they were driving now upon a lode, and every metre they went in advance was improving their prospects, and, therefore, it was that they were now developing the adit in the new concern, and were devoting their attention entirely to that spot, so that the expenses should be kept down to the lowest possible point. The last two paragraphs in the report showed exactly the condition which they were in. He really had not much more to say. He had told the shareholders what were the expectations of the directors. There was one point which he was able to refer to with pleasure, and which he thought the shareholders would receive in the same spirit, which was that the directors, taking into consideration the position of the company, did not intend for the present taking any more fees, but would give their services gratuitously, not giving up their fees, but not taking them till more prosperous times came. (Cheers.) The directors would endeavour to develope the property at as little cost as possible, and should the time come when the directors were able to take their fees he was sure it would be equally pleasing to the shareholders as to the directors, because it would show that the company was in a prosperous condition. (Cheers.) In conclusion, the Chairman moved the adoption of the report and accounts.——Mr. GOLDSMID seconded the resolution.

A SHAREHOLDER asked whether the company ever possessed the Mine of Rayas?——The CHAIRMAN said there was a large debt due to the company from the mine. This company was in no way liable for the working, as it was worked by the owners, and this company received a certain amount of the profits in liquidation of their debt, which was about $187,000.

The SECRETARY, in further explanation of the same subject, said the Rayas Mine had been worked by this company for a considerable number of years, and it was taken over and worked by the owners. Under the Mexican law, when a mine upon which money had been spent was given up, and was afterwards worked at a profit, a part of the profits so made had to be paid to recoup those who had originally spent money on the mine, and this was the reason why payments were being received from time to time in liquidation of the debt.

The CHAIRMAN, in answer to a further remark, said when the $187,000 were repaid this company would not regain any ownership in the mine.——The resolution was then put and carried.

A vote of thanks to the Chairman and directors closed the proceedings.

LANESTOSA LEAD AND ZINC MINING COMPANY.

The seventh ordinary general meeting of shareholders was held at the company's offices, Queen-street Place, on Thursday,

Mr. W. COX in the chair.

Mr. H. SWAFFIELD (the secretary) read the notice convening the meeting, and the reports of the directors and superintendent, together with the statement of accounts to June 30, were submitted:—

The report stated that the works at the Asuncion Mine have been suspended, as recommended by the directors in their last general report, the operations having of late been confined to the Matienzo Mine. The directors, in their last report, pointed out the great promise which the mine held out; and, although the trials have been as yet somewhat limited in extent, sufficient has been done to justify the favourable opinion the directors formed of this mine, and to encourage the hope that it may prove a profitable one. The Matienzo Mine being the only mine of promise in the possession of the company left untried, it was the intention of the board, in the event of this proving a failure, to recommeend the immediate winding-up of the company. Happily, however, the Matienzo Mine has not proved a failure on the contrary, the two points now in operation—La Cruz Adit and Soldado's winze—are each worth 3 tons of zinc ore per fathom, which Captain Gifford states will leave a profit on the working.

The superintendent (Capt. Samuel Gifford) reported that the chief work done since the last meeting has been the exploration of the Matienzo Mines, and the works are now confined to them. As to these mines, he states that from ground ceded and new registrations made the area held has increased to nearly two-thirds of a mile square. This embraces many lodes that have already been largely worked at surface. La Cruz lode has shown encouraging features throughout, being rarely without ore, the value of the whole raised in driving the level and winze being more than the cost of the work, while the appearances in the end of the one and the bottom of the other are better than at any previous period. Their future hopes rest entirely on La Cruz lode, for though there are others untried in the ground held no expenditure on them can be recommended until some measure of success be attained on the one named. He had hoped to have given a strong opinion in favour of this ere now. The lode is frequently showing the most flattering appearances, but as yet its character has been too fluctuating to give one perfect confidence in its results, and especially when viewed with the experience we have hitherto had here. Enough has been seen to be sure of getting a good quantity of ore when the lode is opened, but the question of difficulty is—Will the ore be found sufficiently continuous and concentrated to pay for the development and working? To answer this more work is necessary, for the openings on the lode at present are too limited to enable one to form a positive opinion on it. He, therefore, proposes, among other things, the driving of levels north and south from the bottom of Soldado's winze, and to continue the driving of the adit end. To carry on all the points mentioned simultaneously with full pares of men, with other contingent work, will require about 200*l.* per month, and if the levels at the bottom of the winze do not prove hard he estimates that it will require four or five months more to get forward sufficiently to form an opinion upon the lode. This appears to him to be the only plan open for the true interest of the concern. If he did not think the prospects at La Cruz held out strong chances of success he would have recommended the winding-up of the concern at once; but to do this just now would be to throw away what seems one of the best opportunities they have had, and they may be sure that if they dropped it at the present time others would take it up readily to prosecute the trials further. He can only hope that they will not be disappointed in this instance, as they have in too many previous ones.

The CHAIRMAN, in moving the reception and adoption of the reports and accounts, observed that if the meeting had been held a month ago he would have had to propose also that the company should be wound up. They had always been in hopes of making good discoveries, and anticipated making a mine, but those hopes and anticipations had constantly been disappointed, until they had got as low in spirits as they were in produce, and determined upon the agents setting to work in another part of the property, and he was happy to say that they had now a fair chance of making this a dividend paying concern. The last report they had received from the agent stated that the La Cruz adit was worth 3 tons of zinc per fathom; Soldado's winze was also worth 3 tons of zinc per fathom; the 50 metre, north of Soldado's winze, was worth 3 tons of zinc per fathom; and the 50 metre, south of Soldado's winze, was worth 4 tons of zinc per fathom. If that continued, not only would they be able to pay expenses but to make a profit in addition. He could not, therefore, in the interest of the shareholders propose to wind up the concern; indeed, it might after all turn out very profitably to them. He concluded by formally moving that the reports and accounts be received and adopted.

Mr. YOUNG complained that the names of the directors did not appear on the report, and enquired whether the same directors had been in office ever since the prospectus was issued. He was unacquanted with any of the gentlemen, but did not think it a good thing, as a principle, for the same gentlemen to be always on the direction. He suggested that the directors should either forego their fees, or reduce them to one-half, until the shareholders received at least 2½ per cent. as dividend. He was a shareholder in the Emma Mine, and much advantage had resulted from changing the directors. The present board were working gratuitously.

The CHAIRMAN replied that the first complaint was that the directors names was not on the report, and he could only say that they were omitted by a mere oversight, which would not occur again. The directors' names were put upon the reports of all the other companies in the office, and he was sorry it had been forgotten in this case. As to the remuneration to the directors, he need only explain that they received 30*l.* per annum each, and certainly none of them were inclined to perform the duties for less. The directors were the largest shareholders, yet he thought it unreasonable to expect them to come there 26 times for 15*l.*, much less for nothing. The directors were the same as those whose names appeared on the prospectus, with the exception of one who had departed this life. He could only wish that his friend who had complained had to do the same amount of work and undertake the same responsibility for 30*l.* a-year. He could assure him that the directors would throw the concern up as soon as they believed the prospects of success were gone; but the directors represented between 1500 and 2000 shares, and still hoped that they were not going to lose their money. He would, moreover, say that there was ten times more anxiety and annoyance in carrying on an unsuccessful concern like this than in the other concerns in the office—the Linares, Alamillos, and Fortuna—which had been paying 22 or 23 per cent. per annum for the last 20 years.

Mr. TAYLOR would like to say one word in reply. In this concern as in others which had been brought to their notice, they had used their knowledge of Spain to select what they believed to be good, but this had not been so fortunate as others hitherto. They, however, took a good share themselves, and still held it, and they had picked them out one of their best men—Capt. Samuel Gifford—to manage it. He and his brother each received 50*l.* per annum, and their rule was not to make their charges so high as to be complained of; and he could not allow this gentleman to go away with the idea that anyone is overpaid. He thought that if the shareholder were to see the mine he would be satisfied that all that was possible had been done, though this happened to be one where they had bad luck.—The reports and accounts were then unanimously adopted.

Mr. RAIT in moving the re-election of Messrs. Piell and Cox, the directors who retired by rotation, said that as an original shareholder and as auditor he thought he ought to say a word with reference to the management. It should not, he thought, be a question in determining the remuneration to be given to the directors whether dividends were or were not paid; he thought raising that question was an error in principle. That the meeting was not more largely attended was, he believed, due to the fact that all the shareholders were perfectly satisfied, except so far that up to the present time the mine had not been profitable. There was, however, another 2s. 6d. to call up, and he believed that all the shareholders were quite ready to risk losing that, as well as what they had already subscribed, for the chance of the concern becoming successful. He would only adopt the concluding words of Capt. Gifford's report—"I can only hope that we shall not be disappointed in this instance, as we have in too many previous ones." He considered that a proper way of concluding a report, and was quite ready to adopt the views of the Chairman and directors as to the future.

The retiring directors and auditors were then re-elected, and the proceedings terminated with the usual complimentary votes.

FRONTINO AND BOLIVIA (SOUTH AMERICAN) GOLD MINING COMPANY.

The annual meeting of shareholders was held at the Cannon-street Hotel, on Friday, Nov. 2,

Mr. THOMAS EYRE FOAKES (the Chairman) presiding.

Mr. J. JAMESON TRUBAN (the secretary) read the notice calling the meeting, and the report of the directors was taken as read.

The directors beg to submit to the shareholders their report, together with the accounts, duly audited, for the half-years ending respectively June 30 and Dec. 31, 1876. It will be observed from the half-year's account ending June, 1876, that the profit, after deducting the 1000*l.* voted to the Chairman as a testimonial for his services, amounted to 3381*l.* 7*s.* 5*d.*, as against 4177*l.* 19*s.* 2*d* for the previous half-year, being really an increase in profit of 1203*l.* 8*s.* 3*d.* (the 1000*l.* being an exceptional outgoing); the profit for half-year ending December last was only 685*l.* 4*s.* 9*d.* The fact of there not being a larger profit for the June half-year, and of there being so small a profit for the December half-year, is entirely to be attributed to the disastrous revolution with which the States of Columbia were visited; this revolution commenced about August, 1876, and ended about March last. Necessarily most of the company's best men were either taken under the conscription laws for soldiers or ran away to avoid the conscription, while the pumps for the Silencio Mine, which were being constructed at Medellin, and which were then on the eve of completion, and the machinery for the Palmichala Mine could not be proceeded with; it need hardly be said that this has been productive of great loss to the company. Happily the revolutionists have been so effectually suppressed as to render them powerless to create any further disturbance, and those best informed on these matters are of opinion that the States may now look forward to a long period of peace and commercial prosperity. From the reports recently issued to the shareholders it will have been seen that the Silencio Mine went to work for a short time in July last, and that the yield from the 24½ tons of stuff dealt with was no less than 44 ozs. of gold, and further that of this 24½ tons only about 2¼ tons were mineral from the lode, the rest being stuff from the hanging-wall, which is soft, while the footwall and the lode are both hard. If this mine turns out only a quarter as valuable as Mr. Robert White represents it to be, it will of itself suffice to provide large dividends to the shareholders. In another report recently received, Mr. White tells us that the Palmichala Mine, the machinery for working which will soon be completed, will prove equally as valuable as the Silencio Mine.

The directors had hoped to have issued with this a detailed report from Mr. Robert White on the company's property. This document was to have arrived by the last mail; it will probably reach England by the next mail, in time to be read to the shareholders at the general meeting.

The directors recently informed the shareholders that a sum of 5000*l.* was owing to this company from the Antioquia Company. It is hoped that in a short time arrangements will be made by the Antioquia Company to discharge this debt, and this sum will then be available for distribution among the shareholders in the shape of dividend.

The director who on this occasion retires by rotation is Mr. Monypenny, who offers himself for re-election.

In accordance with the Articles of Association Mr. Tilly, the auditor, who was appointed by the shareholders, retires from office, but he offers himself for re-election.

The CHAIRMAN said there was one mistake in the report to which he would call attention. It was stated that there was an increase of profit, as against the previous half-year, of 1203*l.* 8*s.* 3*d.*, whereas it should have been 203*l.* 8*s.* 3*d.* When he had the pleasure of meeting the shareholders in July or in August last year it was at a special meeting convened for the purpose of making certain alterations in the Articles of Association, so as to enable the directors to pay interim dividends without calling a general meeting of the company. At that time the directors had not received advices that the revolution, which had then broken out, was in existence. But for that circumstance the board would be able now, and would have been able for some months past, to pay dividends, as they anticipated. In the reports which were issued every month the directors stated, as fully as they could, all the events which had taken place since the last meeting, and, therefore, his speech to them to-day would be a short one, because it being useless to repeat what the shareholders had had under their notice for some months past. The position of affairs when the revolution broke out was this; the ordinary mines, exclusive of the Silencio and Palmichala Mines, were producing about 1100*l.* clear profit per month, and they were told by Mr. White, the manager, that when they had got the Silencio Mine to work they would have an increase from that mine alone of 1500*l.* a month. When the revolution broke out they were within three weeks of having the pumps completed for draining the Silencio Mine, but the revolution caused the work to be suspended, many of the men being taken for the conscription, whilst those who were not taken went away to escape the conscription, and only returned by degrees. This had been the cause of great loss, but notwithstanding this, and all the concomitant disagreeables which followed the revolution, the company did succeed in making during the continuance of the revolution a profit of 2000*l.* But now they had arrived at a different state of things: the revolution had terminated, and the directors were informed that the machinery at the Silencio Mine was erected, and during the last and present month they had some very valuable information with regard to the testing of the ore which had been obtained from the Silencio Mine. In the last month's report, which had been sent to the shareholders a short time ago, it was mentioned that the yield from the Silencio Mine from the 24½ tons of stuff dealt with was no less than 44 ozs. of gold, and further that of this 24½ tons only about 2¼ tons were mineral from the lode, the rest being stuff from the hanging wall, which is soft, while the footwall and the lode are both hard. In the present month Mr. White, in his report, stated that from the Silencio Mine they obtained only 21 tons of ore, which produced about 80 ozs. of gold, and of this 7 tons of lode produced about 70 ozs., or at about the rate of 10 ozs. per ton from the lode. If anything like even ½ oz. per ton was produced by any mine that would be a satisfactory result, but if they got anything like 10 ozs. to the ton he did not know what would be the result. In the *Mining Journal* of Sept. 15 someone wrote a letter, and signed himself "An Old Shareholder." He did not know who the writer was, but he would read that letter, which was as follows:—

TO THE EDITOR OF THE "MINING JOURNAL."

SIR,—For some months past the Silencio Mine belonging to this company has given signs of extraordinary richness. Previous to the water getting in the mine the yield at the bottom of the shaft was 41 ozs. per day, and 75 ozs. at the bottom of the engine-shaft a little distance away. The water is now pumped out, and the mine, I suppose, will begin to return ore. Rich as this mine is I am of opinion that the Palmichala will some day beat it. In an old report Mr. White says:—"Two mines on the borders of the company's property (Sacre and Cristales) yielded—Sacre, 260,000*l.* profit on an outlay of 3000*l.*, and Cristales 71,000*l.* profit in eleven months. The mine Columbia is close to these, and very rich, and the Palmichala by the tributers. I cannot now say the yield per ton. If this mine does not prove as good a prize as the least of the two I have named I shall be surprised. Take later report than the one I have quoted from—August, 1874. In this Mr. White says:—"Bolivia, Mira, Cristales, Palmichala, Silencio, and Columbia, increase in richness as they go downwards." If this was so in 1874 why should it not be so in 1877? When Mr. White penned this report in 1874 he did not forsee what a good mine Silencio would prove, but seemed to think more of the Palmichala, as from a very careful study of the reports—old and new—I shall expect when the Palmichala is well opened out to see it beat the Silencio. OLD SHAREHOLDER.

As regarded the Palmichala, he would call attention to the report dated September, 1877, in which Mr. White, writing to him, said:—"A great deal of the Palmichala engine is here, and the foundation is well forward. This mine has suffered greatly from the revolution, and there will be some delay in getting it into working order, but we shall be well repaid, as it is richer than the Silencio." There was another point to which he would refer, and that was with respect to the 5000*l.* or thereabouts which was owing from the Antioquia Company. He had received letters from two or three shareholders, asking how it was that this company had lent money to the Antioquia Company, and he would, therefore, explain how that arose. The shareholders would remember that the Frontino and Bolivia Company borrowed something like 10,000*l.* upon debentures, and when they were getting into a prosperous condition they thought it very desirable that that debt should be wiped out. The mode in which the directors suggested that this should be done was that they should sell the Frontino Mine, which was eight days from the Bolivia Mine, making the Antioquia Company pay off all the debenture debt, and one-half (about 2500*l.*) of the money which was owing to Messrs. Restrepo, the bankers. That arrangement was carried out, the terms being that this company got 10,000*l.* worth of fully paid up shares of the Antioquia Company, that company undertaking to pay all the debentures and the interest accruing, and also to pay half the debt to the bankers at Medellin. Owing to the cross-course met with in the lode of the Antioquia Mine unfortunately that mine had not developed so rapidly as was anticipated; all the powder in the country was taken by the Government, and the result was that the Antioquia Mine could not be developed and could not pay off the debenture debt, and the Frontino and Bolivia Company, as legal signatories to the debt, had to pay it. Besides that he should tell them that recently Messrs. Restrepo had taken 1000*l.* out of the Frontino and Bolivia assets then in their hands towards payment of moneys necessary to carry on the Antioquia Mine. That was done without the sanction of the board. No doubt the bankers should have first consulted the board on the subject, and the board had so informed Messrs. Restrepo, but looking to the kind and handsome way in which the company had always been treated by Messrs. Restrepo, and to the fact that it was entirely owing to those gentlemen that the mine was now in existence and in the hands of the present company, he thought it would be unrighteous on the part of the board to make any further comment, beyond saying that none of this company's funds should in future be so appropriated without the knowledge and concurrence of the directors. (Hear, hear.) He was sure the shareholders would concur in looking at the matter in that light. (Hear, hear.) He should now like to say a few words with respect to the Palmichala Mine. The Palmichala Mine came into this company's possession last year, previous to which time the company had let it on lease. The company had to erect an engine, and an engine was accordingly sent out just before the revolution; in consequence of the revolution the engine had been kept on the coast, and had only recently been sent to the mine. It was now in course of being erected, but this would take some little time—perhaps two months or more from that time. Until it was erected the mine could not become profitable, but from the Silencio Mine he believed every month now would see a very large addition to the profits. If it were anything like 10 ounces to the ton the profit would be something wonderful. He did not, however, wish them to do more than listen with attention to the statement which had been made by Mr. White. It was so extraordinary a yield that one could scarcely give credit to it. But in corroboration of the statement there was the letter which he had read in the *Mining Journal* from an old shareholder, and if this company's mine produced anything like the amount which was referred to there, there would be large amounts of dividends to distribute; in fact, he supposed the shareholders would be coming to the directors for dividends every month. (Cheers.) He had recently seen two of the members of the firm of Messrs. Restrepo, who had told him that the mines were a very fine property indeed, and he knew (although he would not say in what way) that the advices which they had given about the value of the shares had been acted upon in a very extensive way by people who must know what they were doing. Before moving the adoption of the report he should be happy to answer any questions.

A SHAREHOLDER asked what was the present position of the Antioquia Mine?

The CHAIRMAN said a statement was sent round to the shareholders every month explaining the position of that mine. The last mail showed that there were crushed 79 tons of ore reduced, with a produce of 55 ozs., or an average of 14 dwts. to the ton. The gold bought was 22 ozs., making a total of 77 ozs., value 216*l.* The costs at the mine and at Medellin were 430*l.*, leaving a loss of 215*l.* But they must not attach too much importance to that, because in the Antioquia Mine, as in the Frontino and Bolivia, they had serious difficulties to contend with in consequence of the revolution; most of the men were taken away, and no powder could be obtained, the Government having taken all that there was. He believed that if the shareholders would have a little patience the Antioquia Mine would produce very much what Mr. White told them it would. The cross-course had been a serious detriment in the place; then came the revolution. Of course they knew that in mining it was impossible to say to months, or even to a year, when a mine would come into profit. Let them look at the Frontino and Bolivia. He hoped the Antioquia would be so bad as those. Many could recollect the time when the Frontino and Bolivia shares were selling at 6*d.* each. He himself had 1000 offered him at 6*d.* each, but he did not then think it wise to buy any more. He wished he had now. (A laugh.) So he hoped the shareholders would not despair, for he believed that with patience the Antioquia would turn out a good and profitable mine. When they were paying 10 per cent. in the Frontino and Bolivia that same money, on account of the smaller capital, would pay 30 per cent. in the Antioquia.

A SHAREHOLDER asked what was the news by the last advices from Frontino and Bolivia?——The CHAIRMAN said that 553 tons produced 456 ozs., being 16½ dwts. to the ton on an average; the gold bought was 283 ozs.; value altogether 1934*l.*; monthly expenses, 1475*l.*; leaving a profit of 478*l.*

A SHAREHOLDER, who said he had only recently joined the company, asked from the money which had been expended on capital account had been laid out?

The CHAIRMAN said that money on capital account had been spent at Palmichillo, and was for things which it would be unfair to charge against profit and loss account.

A SHAREHOLDER said there were two or three observations which had occurred to him in connection with Messrs. Restrepo having taken the money in the way referred to by the Chairman. He was glad of the explanation which the Chairman had given on the subject, because it did occur to him that it was making use of the money of this company in a way which was scarcely justified. But after the explanation which the Chairman had given he did not see there was anything which the directors could have done. But even supposing that Messrs. Restrepo were not legally entitled to take it, yet, looking at the handsome manner in which they had always behaved to the company, it was really no more than they were entitled to. He had been a shareholder since 1884, and held between 3000 and 4000 shares, and he knew that if Messrs. Restrepo had not acted in the handsome manner they had done this company would have been wound-up. (Hear, hear.) Having regard to that, and to what they, no doubt, believed—that the company had come into profitable working order, Messrs. Restrepo were only anticipating what they would be able to obtain from the other company. As regarded Mr. White he (the speaker) had watched attentively the reports which had come from that gentleman from time to time, and he felt more and more that in Mr. White they had a faithful and valued servant, who had brought the company from a condition it was in under the last manager into a fair state of prosperity, and, as far as they could look into the future, into a high state of prosperity. At the same time he thought that Mr. White had been over sanguine in some of his anticipations, and it was open to doubt whether he would be fully able to carry out his promises. He had the fullest confidence in the ability and integrity of Mr. White, but he thought the board should seriously call the attention of Mr. White to the fact that the promises held out in his report for some time past have been unfulfilled, and should urge upon him to fulfil approximately the hopes held out to the shareholders.

A SHAREHOLDER, who said he had only recently become a proprietor, expressed his concurrence in the remarks of the last speaker. He noticed that a considerable amount had been spent on capital account, in putting up new machinery, but on looking to the accounts he found that all the capital had been paid up. He hoped that in future the Messrs. Restrepo would not apply any further moneys belonging to this company to pay the Antioquia debt.

The CHAIRMAN said it was quite true that the hopes held out by Mr. White had not yet been fulfilled, but the shareholders must take into consideration the position of the mines when Mr. White first undertook the management. Through Mr. Restrepo's mismanagement the mines were then in a state of chaos; the company owed the bankers 5000*l.*, and had only 20*l.* in the bank in London. The company had no office, and there was only himself and another gentleman remaining as directors. That was the position of affairs when Mr. White undertook the management, and when they considered what Mr. White had achieved they ought to treat with great consideration the fact that he had not yet been able to fulfil, as regarded time, the promises which he had held out. It was not right to say that the mines had not been doing anything, because for the year 1876 they produced a profit of 9000*l.* As regarded the capital expenditure, if they wanted to make the mines successful they must erect the engines. They could not work the Silencio Mine unless they did so. As regarded the company having no capital, as a matter of fact they had 10,000*l.* worth of capital invested in the Antioquia Mines. In the first month the 1*l.* shares of this company were sold for 13*s.* and 14*s.* The directors did not advise the parting with those shares, believing that in a little time they would be worth 10,000*l.*, and they could then sell the shares, or distribute them amongst the shareholders. It was true Mr. White had not been up to the time regarded promises, but those gentlemen who were acquainted with mining well know that no one could say with certainty when the prognostications about a mine would actually be fulfilled. If they could be sure that a mine would develope itself in a certain time they would not get the large dividends they did when success was obtained, because the shares would always be at a price which would produce much more than 6 or 7 per cent. being paid upon them. Every man who looked into mining knew that it was a speculation, and unless they could look into the bowels of the earth they could not say what any mine would produce. The director's had drawn Mr. White's attention to the fact that his promises had not been fulfilled with regard to working the mines productively to the extent expected, and the reason was that there had been the revolution, and slips of fearth had occurred, and so on. They must look at the fact that in one month there had been 1100*l.* profit, and if there had been no misfortune like the revolution Mr. White would have fulfilled within a year the promises he made with regard to making a month profit. As regarded his friends Messrs. Restrepo (for he had pleasure in saying they were friends of his), the directors had written to those gentlemen regarding

the 1000l., and he was perfectly satisfied that it would not be repeated. He could not too strongly impress upon the shareholders the fact that but for the kindness of Messrs. Restrepo in lending the company money at 8 per cent., when the shareholders would not advance it at 12½ per cent., the company could not have gone on. Messrs. Restrepo had done what very few bankers would have done for the company. The property was virtually gone; there was not a farthing left, but by their assistance the company was saved from utter ruin.

Some further discussion ensued on the point, in the course of which several shareholders expressed their full appreciation of the great services which had been rendered to the company by Messrs. Restrepo, and also their opinion that the directors had acted wisely under the circumstances in drawing the attention of Messrs. Restrepo to the matter, and there allowing it to rest.

A SHAREHOLDER said that Messrs. Restrepo were also rendering valuable service to the company in another way. They were exercising very judicious control at the mines. Mr. White was employed by Messrs. Restrepo at some of their own mines, and that was the best evidence the shareholders could have that those gentlemen had full confidence in Mr. White.

The CHAIRMAN then formally moved the adoption of the report, which was put, and carried.

The accounts of the company were then formally passed.

Mr. Monypenny was re-elected a director, and Mr. Tilly re-appointed auditor.

A cordial vote of thanks was then passed to Messrs. Restrepo for the great services which they had rendered to the company.

A vote of thanks was then passed to Messrs. Restrepo, the bankers, and to Mr. White (the manager), and a similar compliment having been passed to the Chairman and directors, the meeting broke up.

WEST GODOLPHIN MINING COMPANY.

A general meeting of shareholders was held at the offices of the company, Great St. Helen's, on Tuesday,

Mr. ROBERT WILSON in the chair.

Mr. CHARLES THOMAS (the secretary) read the notice convening the meeting, and the minutes of the previous meeting, which were confirmed. The following is the agent's report:—

Nov. 3.—I beg to hand you statement of work done in the past four months, and distance driven and sunk in the different levels and shafts to the present date. Work done in the past four months:—Caunter Lode: Wilson's engine-shaft has been sunk 1 fm. 2 ft. below the 70. A cistern plat has been cut below the 70 for fixing the drawing-lift at that level, and the cistern fixed in its place for receiving the same. The 70 has been driven north 11 fms. 1 ft. The 60 has been driven north 6 fms. 1 ft.—Wilson's Lode: The 60 has been driven east 2 fms. 5 ft. 9 in. Boulton's whim-shaft has been sunk 1 fm. below the 50.—Pink Lode: The 50 has been driven west 4 fms. 5 ft. 2 in.—Wilson's Lode: The deep adit level has been driven west 6 fms. 0 ft. 6 in.

Value of the lodes, distance driven and sunk to the present date:—The Caunter lode in Wilson's engine-shaft, below the 70, is full 8 ft. wide (mixed with granite), worth for the length of the shaft 30l. per fathom, but in order to more speedily sink the shaft, also as being more desirable for fixing the pitwork, and less strain on the engine as depth is attained, I have thought it would be best to carry the shaft 5 ft. wide, at a regular angle, irrespective of the width of the lode or its underlie; sunk 1 fm. 5 ft. In the 70 driving south we are carrying a part of the lode—4 ft. wide—worth 5l. per fathom, and have driven 4 ft. 6 in. In the north end of the shaft, below the level, eight men are engaged cutting trip-plat; they are carrying a width of 8 ft., which is all lodestuff, worth 12l. per fathom; as soon as this is completed I purpose to resume sinking the shaft by 16 men, so as to get another sump as early as possible. In the 70 driving north the lode is 2 ft. wide, worth about 3l. per fathom; we are daily expecting to cut the killas in this level, as the water is increasing very fast, and the appearance of the ground changing; we have driven 14 fms. 4 ft. I hope we shall cut Wilson's lode at this level in three months' time, or a little less. In the 60 driving north the lode is in three small branches, producing a little tin, and occasionally stones of copper ore, but not sufficient to value; we have driven 11 fms. 2 ft.—Wilson's Lode: In the 60 driving east the lode is 4 ft. wide, worth 10l. per fathom, and letting out a large stream of water; we have driven 57 fms. 3 ft. In the 60 driving east the lode is 15 in. wide, of low-price tinstuff; this level is now driven to the western end of Boulton's whim shaft, which has been holed with a bore-hole, but the bottom of the shaft is 3 ft. above the back of the 60, which ground we shall rise through as soon as the level is quite under the shaft. In the 50 driving west the Pink lode is 18 in. wide, worth 5l. per fathom; driven 16 fms. 3 ft. 8 in. In the deep adit level driving west Wilson's lode is split in four branches, which are poor; we have driven 22 fms. 0 ft. 6 in.

Wilson's: No. 1 stope in back of the 60 west is 6 ft. wide, worth 15l. per fathom. No. 1 stope in back of the 60 east is 12 ft. wide, worth 15l. per fathom. No. 1 stope in bottom of the 50 west is 10 ft. wide, worth 18l. per fathom. No. 2 stope in bottom of the 50 west is 6 ft. wide, worth 10l. per fathom. No. 3 stope in bottom of the 50 west is 6 ft. wide, worth 10l. per fathom. No. 4 stope in bottom of the 50 west is 6 ft. wide, worth 12l. per fathom. No. 5 stope in bottom of the 50 west is 5 ft. wide, worth 9l. per fathom. No. 1 stope in back of the 50 west is 4 ft. wide, worth 5l. per fathom. I put one man and one boy yesterday to cut a barrow-road at Boulton's whim-shaft in the deep adit level preparatory to driving this level east, which I think ought to be driven, and I also intend on Monday to put on men to sink a winze in the 60, north of Wilson's engine shaft, on the caunter lode; this will prove the ground, also ventilate the 70. In addition to the work done underground, we have erected the new 60-in. cylinder engine, drawn the old pitwork to surface, and fixed new (14 in.) 60 fms. below the adit level, and I am pleased to say the engine and pitwork are working well, and will keep the water with the engine going about 4½ strokes per minute. We have also removed the drawing engine, taken down the old shaft tackle and erected a new one, which is working very well. The masons are engaged at present building a stand or loading for the balance-bob, which they will complete next week, soon after that time we shall connect it to the main-rod of the engine. In addition to the winze that I have already referred to, we shall in a very short time after the killas is cut in the 70 be able to sink winzes in the 60 east and west of the caunter, on Wilson's lode, and by so doing we shall be able to open out the mine more speedily. I am hoping in the next four months to open out the mine considerably faster than we have ever done before, and I have no doubt but that that the result will prove satisfactory to all concerned, as the 60 has been the richest in the mine, and the bottom of the level is quite as rich as any part of the level. I am sorry that we are not in a position to sell a larger quantity of tin this time, which will be about 4½ tons, but this is owing to our stamps being idle nearly all the month by reason of the water being in while the pitwork was being changed. We have about 70l. worth of copper ore dressed ready for the market, and have about 60l. worth more drawn to surface. We have employed on the mine 147 men 22 boys and 19 girls: total, 188.—JOHN POPE.

The CHAIRMAN said the shareholders would have heard from the report of Capt. Pope, who entered very fully into the matter, the present position and future prospects of the mine. Their principal business at that meeting was to consider the financial position of the company generally. He was anxious at all times that the shareholders should be thoroughly conversant with the state of the company's affairs, but when at the meeting of another mine he proposed to detail the financial position of the company the shareholders did not wish to hear it. He hoped this would not be the case at this meeting. The accounts now presented showed a debit balance of 632l. against the mine. The loss on the four months embraced in these accounts, taking the costs of the mine against the tin sold, and not including the royalty and the other charges, were 91l. 18s. 4d. in July, 145l. 0s. 5d. in August, 130l. 14s. 9d. in September, and 383l. in October. Since these accounts were made up another cost-sheet had become due, which showed a further loss of 292l. The loss during the past two months—383l. and 292l.—was brought about principally by the changing of the pitwork. The new engine was now at work, but during the time that the pitwork was being changed, and the drawing engine was being removed, no returns could be made, so that the tin sale this week would only amount to 4½ tons. Capt. Pope hoped that during the present quarter the mine would be paying its cost, and that about the end of that period he would cut Wilson's lode, and judging from the prospects in the upper levels there was very little doubt that it would be cut rich. The shaft would be sunk on a lode that was now almost paying the cost of sinking, and if the present prices for tin continued their prospects were good, and there was every encouragement to go on. If Wilson's lode should cut rich, and another level was reached, even at the present price of tin, there was a good prospect of making a fair profit, and there was certainly every reason to hope that the lode would cut very rich, seeing how good the appearances were in the 60 fathom level. The liabilities against the mine, as shown in the accounts, amounted to 632l. 6s. 2d. There was another cost-sheet in, debiting which, and taking credit for the tin sold and the two boilers belonging to the old engine, the balance would be 1102l. There was about 70l. worth of copper ore ready dressed for sale on the mine, and about 60l. worth in an undressed state, so that in round numbers their liabilities at the present time amounted to 1000l. He proposed the adoption of the report and accounts, and the making of a call of 1s. per share to meet the debit balance, the usual 5 per cent. discount being allowed on all amounts paid within 20 days from the date of the meeting.

Mr. BOLTON seconded the proposition, which was carried unanimously.

The CHAIRMAN said there was also the old engine to be taken as an asset. The previous calls had been fairly well met, the outstanding amount being 42l. 2s. 6d. He hoped the shareholders would respond to the call now made at an early date, so that the committee might have the funds in hand to meet the costs of the mine during the next month, and to pay off the liabilities. The machinery was working well. The balance-bob was not yet connected to the engine, but it would be very shortly, and then the consumption of coal would be less than at present.——The committee of management were re-elected, and the proceedings then terminated.

WHEAL GRENVILLE.—At a special meeting of shareholders held at the office of the company, on Tuesday (Mr. F. W. Goold in the chair), it was resolved to sell the 887 forfeited shares at 3l. per share, and to empower the committee to divide the said shares *pro rata* amongst the shareholders whose names appeared on a list presented at the meeting. A further special meeting is to be held on the 20th inst. to confirm the proceedings of Tuesday's meeting.

GREAT WEST VAN.—At the meeting, on Monday, it will be proposed to form a new company—the West Van Mine (Limited)—with a capital of 20,000l., in shares of 1l. each. Of these 14,718 will be distributed to the Great West Van shareholders as the purchase price of the mines, rights, machinery, and effects. One fully-paid West Van share will be given for every two ordinary Great West Van shares, and two fully-paid West Van shares for every one preference Great West Van share. The remaining 5282 West Van shares will be preference shares, and will bear a preferential and accumulative interest of 10 per cent. per annum over the ordinary shares. These preference shares are to be first offered to the Great West Van shareholders. The resolutions, if passed, are to be void unless carried into effect by Dec. 1.

SLATE QUARRYING IN CARDIGANSHIRE.

The large profits which have been realised in Wales from slate quarrying has frequently been referred to in the *Mining Journal*, and still there are a considerable number of promising properties remaining unwrought, and many of those which are in operation are less remunerative to their proprietors than they otherwise would have been, owing to the insufficiency of capital applied to their development. The DYNIN SLATE COMPANY, which, as will be seen from the advertisement in another column, is at present inviting subscriptions for 300 ten per cent. first mortgage debentures of 20l. each appears to come within the latter category—a large amount of the unprofitable preliminary work has been done, and it is now found that the capital which the company has at command is insufficient to place the concern in a permanently profitable position, hence the determination to issue the debentures mentioned, and which are to be secured by a first charge upon the whole of the quarries, plant, machinery, income, and effects of the company now being, or hereafter to be, acquired. The desirability of the debentures as an investment, and the value of the security offered, can only be determined from the consideration of the position and prospects of the quarry, upon which matters the prospectus gives very ample details.

The works are about a mile from the River Dovey, and the same distance from the Glandovery station on the Cambrian Railway. The vein of slate rock is more than half a mile long and 150 ft. wide, encased on each side with granular quartzite, which is always a favourable indication. The vein is visible the whole distance, and very little top has to be removed. The quarry is well situated on the slope of a hill, which facilitates economic working, and there is abundant water power at all seasons for slate dressing machinery, and other requirements. With regard to the work already done the prospectus states that an open cutting at great expense had been made at the foot of the hill, which has intersected the slate rock, proving it to be of the best quality, with regular joints, perfect cleavage, of a blue grey colour, free from spots, and of a silky texture. The quarry, from this cutting alone, is now in a position to supply roofing slates, and slabs of any size can be prepared for market by the time the sawmill is erected. This, it is computed, will take about six months, by which time a large quantity of slabs will be ready for conversion into marketable sizes. It is mentioned that many slate quarries require a large outlay to be made in "untopping" and clearing, before any produce can be obtained, but here there is comparatively little to remove, which is a very important feature, and which has and will save many thousands of pounds in labour.

The carriage from the quarry to the point of embarkation is pointed out as being in itself a most valuable feature, as the material can be put either into railway trucks or on board ship for 1s. 6d. per ton, and a contract can at once be made at that price—an inestimable advantage, it is added, which can hardly be overrated. This view is very fully confirmed by the report of Mr. Pierce, who has carefully inspected the property. He states that the land contained in the quarry is in his opinion sufficiently large to open eight galleries and to employ 1500 men. In his opinion every gallery will require a capital of 5000l., or 40,000l. to open and work the eight galleries. Every man employed is by custom reputed to return 1l. profit per week, so that on the capital considered requisite about 100 per cent. per annum would be realised. The slate veins on this property possess the desirable horizontal joints, thus avoiding waste by the use of powder and facilitating the making of large slates and slabs. There is ample tip room for extensive operations, and the slates and slabs are good and a marketable colour, easy to clean, and in his opinion will prove of well proportionate sizes. As the quarry is so near to a railway and a shipping pier, the expense of making a railway and buying land for it is saved, frequently costing from 50,000l. to 100,000l. The demand, it is added, is now so great that buyers never expect their orders executed within six months, and in many instances contracts are declined altogether even for cash on delivery.

The quarry is held on lease at a dead rent merging into the low royalty of 2s. 6d. and 3s. per ton. There are no charges whatever beyond the rent, and the company possess every facility for working the property, and, therefore, very fairly conclude that, taking into consideration the position and great width of the Dynin slate vein, the quality, colour, and cleavage of the metal, the large space and fall for rubbish, the unlimited supply of water-power, and the short distance to a railway and shipping wharf, there can be no doubt that, with proper management, this quarry will soon rank amongst the most productive and remunerative in the Principality.

A VISIT TO THE CELEBRATED COMBMARTIN MINES.

About five miles from Ilfracombe, six from the rising summer resort of Lynton, and snugly sheltered on the one side by lofty cliffs overlooking the British Channel, and on the other by the high hills stretching away towards the forest of Exmoor, stands the long, straggling village of Combmartin, celebrated in the history of England as having supplied from its mines the wherewith to carry on the civil wars, and replenishing from time to time the needy coffers of "Ye Merrie Monarch," who in his diary says, "We have just had a syght of the vast ryches of Combmartyne." And recently the well-known authoress, Miss Braddon, has honoured Combmartin with a lengthy visit, and found its history and picturesque surroundings sufficiently romantic to lay there the scene of the last production of her graphic pen. Being in the neighbourhood we though we would run over and see the mines, of which we had read and heard so much, and which now, after a lapse of 30 years, are being re-opened with all the advantages which time and science have brought to the miner's aid. On entering the village from the Ilfracombe end, the first object that catches the eye is the old smelting works, in which we learn many tons of the finest silver had in byegone times been extracted from the ore, which is said to contain the greatest quantity of silver of any mine in the United Kingdom.

There are two hotels in Combmartin, the King's Arms, locally called the "Pack of Cards," in consequence of its peculiar construction, and the Valley Hotel, a well appointed hostelry, recently built, in anticipation of increasing requirements, consequent upon the mines being worked. About half way up the village we turn to the left, and ascend a steep, uneven lane, running across which the backs of several lead lodes were pointed out, with streaks of bright silvery ore visible; on arriving about half way up, we reach an eminence where a good view of the village and surrounding country is obtained. Passing through a gate, we came upon a neatly-built house, which stands immediately over the shaft called "Harris's." Around this spot are heaped thousands of tons of a bluish-grey kind of earth, largely intermixed with white spar, and here and there heaps of glittering ore are piled up awaiting the crushers in course of erection. In answer to our enquiry, we were informed by Capt. Maunder, the resident agent, whom we knew by his accent to be a Corinthian, that the different heaps varied in quality, it being always necessary to "sort the piles" previous to crushing and dressing; and as we have always understood that the Combmartin ore contained a great quantity of silver, we asked which class contained the greatest proportions, and were somewhat surprised to find what we considered the poorest to be the richest; naturally expecting the brightest and most glittering to be of most value, but were shown that it was the finest-grained dull-grey ore which brought the highest price. A small piece of this was picked out for us, Capt. Maunder called it "Fahlers ore." And we were informed that it contained at the rate of 300 ozs. of pure silver to the ton, much more than the average, which is about from 60 to 80 ozs. On entering the house, at one end of which hung several suits of underground clothing, we found ourselves standing over a "yawning abyss," down which a series of ladders seemed to fade into inky blackness. "How deep is this shaft?" we enquired. "Down to the 38 fm." We placed our hand upon the cross-bar of the windlass, and took another look. Just at this moment a little spec of light appeared; this was caused by a miner ascending with a candlestick on his hat, stuck with a bit of clay, several other jets came in view, and we were informed that they were to be relieved by the "afternoon core." "Would you like to go down?" asked the captain, with a sarcastic smile, as we looked at the strange individuals covered from head to foot with damp earth. "I can provide you with a dress that will keep you dry and clean." Now, we were never considered wanting in pluck, but must confess to a sort of feeling, at this moment, something akin to what is designated the "white feather;" but on receiving an assurance that it was "perfectly safe," which we could scarcely doubt, looking at the well-squared shaft, the massive baulks of closely-fitted timber, and the strong well-secured ladders, we summoned up courage, assented, and were soon equipped in such attire that had our poor dear mothers seen us at this moment they would have failed to recognise us. Everything ready, we began to descend, and soon reached the first platform, from which we descended by another series of ladders, and were soon at the bottom of the 27 fm. level. Here a passage or adit right and left is driven, and is from this level most of the ore at surface is being procured. The feeling we experienced before going down seemed to leave us, for we found ourselves asking the captain to allow us to break down with our own hands a memento of our visit. He handed us the pick; we let fly, but were quickly brought up by the captain, who said we were taking down too much of the country. We, however, broke enough to select some very beautiful specimens, and then commenced descending to the 37 fm. level. This was soon reached, and we found another set of men clearing the adit to enable them to reach the lode at this greater depth, where they expect to find it richer and more plentiful. The consciousness of being so far down with little flickering lights which help to make the darkness more intense, realised to our minds in no small degree a passage in Dante's "Inferno;" but to show we felt quite at home, we entered into a friendly chat with one of the miners, who seemed to be as communicative as we were inquisitive, though we must confess we were as wise after our dialogue as before; for although, no doubt, perfectly intelligible to mining men, it was to us a decidedly *dead* language.

"What is that you are clearing away?" we asked. "*These be deads going to grass to square up for stopes.*" "Oh! indeed," we said, looking very learned, "And do you consider the lode a promising one?" "Brave keenly gozzen, sure enough as prutty a flucken as ever a stuck pick into, just the bob for fahlers and blend." We nodded assent, looking wise as owls, and enquired "What obstacles, if any, were met with in following the lode?" "Well," he said, "sometimes he goes to horse, and sometimes we get a heave or a canter, and have to make a cross-cut to find un again." Of course we quite agreed with him, and every now and then the light of our candles caught the glistening mineral, and in spite of the oppressive feeling, which never entirely left us, we thought of the words in the "Fairy Tempter,"

"If wealth be thy wish, thine are treasures untold;
I'll show the birthplace of jewels and gold."

There are numerous stories and traditions of Combmartin, all more or less bearing on its mineral wealth, and the following, from local lore, is not a bad specimen, and notwithstanding its romantic title gives a most graphic outline of Combmartin and its natural associations:—

THE SILVER SPRITE.

"My paths are rugged, my hills are bare,
But my heart is warm with treasure rare,
My cliffs are washed by Atlantia's wave,
Where many a clue to my covet cave
Is seen in the silvery streaks which say,
Come follow me down, I lead the way.
For was it not by my modest thread
The sons of your were safely led
To where in profusion my riches lay?
And he is not born who shall carry away
In his richest "finds" a thousandth part
Of the glistening treasures that cling to my heart.
I've gladdened the soul of good Queen Bess.
I aided King James in his dire distress;
And the profligate Charles, when his doom seemed sealed,
Was saved by the talisman I revealed.
I have oft been wooed, but I'm not to be won
By a zeal which wanes like the setting sun;
For there are those who shall come and go,
Yet of my smiles they ne'er shall know.
'Tis patience and will, and labour hard,
Shall reap from my depths the rich reward."

The recollection of the above quaint lines and the shining mineral made us feel somewhat like the "sons of yore," with the exception of a strong desire to be modernised as quickly as possible by getting to the surface, for somehow we could not divest ourselves of the fact that we were nearly 40 fms. underground.

The captain now made his appearance like a spectre out of the darkness, and presented us with a few more picked specimens, which, with what we had already obtained, we brought to the surface, and, Oh, no small weight seemed lifted as we regained *terra firma*. The fields and trees had never before looked so beautiful, or the sunshine more glorious; the change from darkness to the bright fresh air, with the birds singing, a charming landscape with the sea sparkling and dancing beyond, made up a scene we shall not soon forget, even did not the little pile of ore under a shade on our library mantelpiece continue to remind us of our visit to the silver-lead district of Combmartin. E. B.

— *Colburn's New Monthly Magazine* for November.

Registration of New Companies.

The following joint-stock companies have been duly registered:—

BARING AND LANGFORD (Limited).—Capital 20,000l., in 1l. shares. To carry on business as tunnel, tramway, and water-power proprietors, miners, smelters, dealers in ores, metals, &c. The subscribers are—S. H. Emmens, 134, Palmerston Buildings, engineer, 500; L. S. Miller, Kelly Bray, Cornwall, ship-owner, 500; H. G. Lord, Palmerston Buildings, merchant, 500; J. J. Climas, Redruth, merchant, 20; H. Bennett, Redmoor House, Callington, mine manager, 20; James Brooking, Stoke Climsland, Cornwall, builder, 20; John Peters, Stoke Climsland, 20. Mr. S. H. Emmens will be the managing director, at a salary of 200l. per annum, and a commission of 5 per cent. upon the dvidends; and Mr. L. S. Miller will be the local director, at a salary of 150l. per annum.

DARTMOOR AND EXETER WATER SUPPLY COMPANY (Limited).—Capital 125,000l., in 5l. shares. To supply Exeter and adjoining parishes with water, from Dartmoor or any other place where pure water can be obtained. The subscribers (who take 20 shares each) are—H. C. Lloyd, Exeter; H Wilcocks, Spurbarne, Exeter; S. Pearse, Fore-street, Exeter; J. Harding, Millbrooke, near Exeter; S Jones, Exeter; G. Hirtzee, Exeter; H. D. Thomas, Exeter.

JEROME AND CO. (Limited).—Capital 25,000l., in 25l. shares. To take over the business of Jerome and Co., but the nature and locality of the business is not mentioned. The subscribers (who take one share each) are—J. A. Hitchcock, Liverpool; J. Milliken, Walton, near Liverpool; W. J. Isaacson, Irwell Chambers, Liverpool; Joseph Forrester, Kerkdale, Liverpool; T. King, Mayfield, Kirkdale; L. E. Stevens, Trizington, Cumberland; H. Waygood, 96, Edge-lane, Liverpool.

UTILITAS LAND COMPANY (Limited).—Capital 20,000l., in 20l. shares. This is a Durham Land Company. The subscribers (who take five shares each) are—W. Sewell, Darlington; John Bourner, Wardley, South Farm, Durham; W. Wilson, Sunderland; John Hodgson, Darlington; H. Tomkinson, Sunderland; J. L. Nicholson, Sunderland; N. Christian, Sunderland.

BOW REFINING COMPANY (Limited).—Capital 10,125l., in 1000 shares of 10l., and 2500 of 1s. each. To manufacture and treat fat according to a patented process, &c. The subscribers are—A. W. Snelling, 62, College-place, Camden Town; A. Larchin, Thornford-road, Lewisham; Henry Labouchere, Queen Anne's Gate, W., 286; Wm. Batcher, 27, Victoria-street, 286; C. Schiff, 36, Sackville-street, 186; Robert Larchin, 4, Finsbury-circus, 100; C. F. Kierkouski, 7, Collingham-street, S.W., 70.

METRPOLITAN MANUFACTURING COMPANY (Limited).—Capital 10,000l., in 5l. shares. To acquire the business of J. F. Bird's washing and wringing machines, and Bower's knife-cleaning machines, now carried on at Shackelwell, N. The subscribers (who take one share each) are—F. J. Bird, 43, Shackelwell-lane, N.; William Sewell, Richmond; C. W. Bradley, 1, Circus-place, E.C.; G. Beck, 37, Devonshire-street; A. Good, 54, Canning-road, Highbury; E. Tayler, Gillett-street, Kingsland; D. Lefow, 2 and 3 St. John's-square.

ROBERT GODDARD AND COMPANY (Limited).—Capital 5000l., in 10l. shares. To carry on business as dealers in boots and shoes at Billiter-square.

LONSDALE CHAMBERS (Limited).—Capital 170,000l., in 10l. shares. To acquire the right and interest of Mr. Henry Godbold in certain property in Chancery-lane, called, or to be called, Lonsdale Chambers. The subscribers are—J. H. Hiley, 8, Arabella-row, S. W., 4; W. Godbold, 7, Dawes' Inn, Strand, 4; S. R. Holmes, 18, Abingdon-street, S.W., 4; G. F. Talbot, 122, Belgrave-road, 4; T. de B. Holmes, 7, Arabella-road, 1; P. G. Pankhurst, 13, Winchester-street, 1.

HOYLAKE AND WEST KIRBY GAS AND WATER COMPANY (Limited).—Capital 25,000l., in 5l. shares. To supply the parish of West Kirby and adjacent districts in Cheshire with gas and water. The subscribers (who take 10 shares each) are—W. Crowe, Birkenhead; C. Cook, Hoylake; W. Maddock, Birkenhead; W. Hartnoll, Birkenhead; M. Downe, Liverpool; Joseph Kellett Smith Liverpool; Charles Holt, Hoylake.

SANITARY LAUNDRY ASSOCIATION (Limited).—Capital 25,000l. in 3000 preference shares of 5l., and 10,000 ordinary shares of 1l. each. This company's object is explained by its title. The subscribers (who take one share each) are—G. E. Acklam, 90, Charlotte-street, Fitzroy-square; S. T. Griffiths, 15, King-street, Cheapside; C. J. Lee, Poultry Chambers; J. L. McLeod, 76, Old Broad-street; C. E. Ferry, 68, Old Broad-street; F. A. Baldwin, Ingestre-street, Kentish Town; C. T. Reynolds, Poultry Chambers; T. V. Whitaker, 12, Warwick-lane.

SUSSEX CHEMICAL WORKS COMPANY (Limited).—Capital 10,000l., in 100l. shares. To acquire chemical works at Lancing, Shoreham, Sussex. The subscribers are—G. Craggs, Stockton-on-Tees, 20; W. C. Craggs, Stockton, 5; John Seward, jun., Middlesborough, 5; Robert Stephenson, Middlesborough, 20; H. T. Craggs, Middlesborough, 20; F. Lennard, Shoreham, 15; H. Tippett, Shoreham, 15.

MIRZAPORE TEA COMPANY (Limited).—Capital 5000l., in 25l. shares. To cultivate tea in the Indian Empire. The subscribers are—Rowland Hunt, Boreatton Park, Shrewsbury, 76; F. M. Hunt, Boreatton Park, Shrewsbury, 4; C. E. Lance, Taunton, 46; M. E. Lance, Taunton, 4; M. H. Bigge, Rock House, Ealing, 14; E. J. Bigge, Ealing, 4; W. H. Coblett, 6, John-street, Adelphi, 2.

A RICH SILVER MINE.—We have recently examined some remarkable specimens of silver ore from the mine of Todos Santos, near Batopilas, Chihuahua, Mexico, which is now being worked by Messrs. Mitchell, Ford, and Co. This mine forms one of probably 50 which exist within a radius of 5 miles around the vicinity. It has been known some 20 years, but was abandoned and re-opened in 1875, since which time it has yielded some $75,000 worth of ore. At present, however, the ore extracted is of astonishing richness, yielding 12 ozs. of silver to 1 lb., and in some cases a hard dollar to every ounce. The specimens exhibited to us were nearly solid silver, nodules and filaments of the metal being interspersed so thickly with the pure white quartz. The mine is situated nearly opposite that of the Batopilas Silver Mining Company, across the Batopilas river, and in the Sierra Madre Mountains at some 1600 ft. elevation, or 2500 ft. above the level of the Gulf of California, from which it is distant about 250 miles. Owing to the almost total absence of machinery—absent because of the inaccessibility of the locality—ore yielding as high as $200 to the ton is thrown aside as non-paying. The rich ore

after treatment in the rude adobe furnaces of the country gives silver 993 fine. It is run into bars worth about $1000 and $1200 a piece. The cost of transportation of ore to New York is 12½ per cent., inclusive of the 5 per cent. Government duty. — *Scientific American*, New York, Nov. 3.

THE SCOTCH MINING SHARE MARKET—WEEKLY REPORT AND LIST OF PRICES.

During the past week there has been a fair amount of business done. The present exceptional state of the markets generally—recovering confidence after the depression that has reigned so long—somewhat restricts business, as there is either little or no stock offering of anything moderately good at all, and holders of shares will not sell if possible at the low range of prices, especially on rising markets, while buyers may not all feel disposed to follow every advance in prices which is gradually going on, but there can be no doubt, in the entirely altered state of market feeling, that to buy quick will prove the wisest plan. In shares of iron and coal concerns, Cairntable mark a further advance of 15s. per share, while Benhar (new) have fallen 14s.; ditto (old), 13s. 6d.; Monkland (pref.), 12s. 6d.; Ebbw Vale, 10s.; and both classes of Glasgow Port Washington, also Monkland, each 2s. 6d. North of England are wanted at a slight advance. The Arniston Coal Company recommend a dividend of 7 per cent.; at this time last year 8½ per cent. was paid. The petition for confirming the resolution reducing the fully paid up capital of the Llynvi, Tondu, and Ogmore from 550,000*l.* to 430,000*l.* is to be heard on the 16th instant. Andrew Knowles and Sons (25*l.* paid) are at 25s. prem.; ditto (50*l.* paid), 4 dis. Bilbao, 25. Bolckow, Vaughan, A, 53 to 54; ditto, B, 33¾. Carnforth, 115¾. Chatterley, 29 dis. Consett, 18¾. Darlington, 11½ dis. Llynvi, Tondu, and Ogmore, 6¾. Mersey, 30s. dis. Sheepbridge, 10¾ dis. Silkstone and Dodworth, 20 dis. Ulverston, 8. West Cumberland, 8. Workington Malleable, 14 to 16.

In shares of foreign copper concerns, beyond a rise of 5s. on Panulcillo, at 30s. to 35s., the others are lower, owing to the fall in copper. Rio Tinto 5 per cents. are reduced 37s. 6d.; Cape, 20s.; Tharsis, 11s. 3d.; Rio Tinto 7 per cents., 10s., and Tharsis (new), 7s. 6d. Copiapo now stand at 13 dis. Fortuna, 5¾: Hultafall, 5: New Quebrada, 40s.; Yorke Peninsula (ordinary), 5s. to 7s. 6d.

In shares of home mines the principal business has been in tin mines. South Condurrow about 20s. better. North Laxey have come to a cheap price, 10s. or thereby. Cambrian continue to attract attention, about 40s., as the property is in a good district, five miles east from Talybont, county of Cardigan. Bampfylde are at 7s. Carn Brea, 55. Cook's Kitchen, 75s. Combmartin, 5s. Derwent, 40s. Dolcoath, 40. East Caradon, 17s. 6d. Glenroy, 17s. 6d. Glasgow Caradon, 19s. Great Laxey, 21¼. Killifreth, 5s. to 10s. Leadhills, 4¾ to 5¼. Marke Valley, 15s. Medlyn Moor, 35s. Parys Mountain, 11s. Rookhope, 21s. 3d. South Condurrow, 10½. South Frances, 75s. Van Consols, 10s. West Frances, 5½. West Tankerville, 17s. 6d. Wheal Agar, 80s. Wheal Grenville, 80s. Wheal Kitty (St. Agnes), 50s.

In shares of gold and silver mines Richmond have risen 13s. 9d., owing to a dividend of 7s. 6d. per share, payable on the 10th inst, being declared. The Richmond run is $70,000, and that of Hunter Consols $10,000—shares of the latter are scarce. Almada and Tirito are at 7s. 6d. Anticquia, 12s. Chicago, 28s. 9d. Eberhardt, 6½. Exchequer, 7s 6d. Emma, 1s. 3d. Flagstaff, 47s. 6d. Frontino and Bolivia, 60s. I. X. L., 7s 6d. Last Chance, 15s. Malabar, 2s. 6d. to 5s. Santa Barbara, 23s. 6d. South Aurora, 5s. to 7s.

In shares of oil concerns the tendency is still downwards. Young's Paraffin have declined 11s. 3d., Uphall 10s, and Oakbank 1s. 6d. Runcorn Soap and Alkali are at 6¾ dis. Shares of miscellaneous companies are a dead letter. Milner's Safe are at 7½; Starbuck Wagon, 11¼; and Scottish Wagon (new), 85s. to 87s. 6d. In chemical companies prices are:—Langdales, 31s. 3d.; Lawes, 7*l.* 1s. 3d.; and Newcastle, 37s. 6d.

THARSIS SULPHUR AND COPPER COMPANY (Limited).—It will be remembered that in April last the Lord Ordinary of the Court of Session found generally in favour of this company in an action at the instance of McElroy and Sons against this company for the payment of 10,094*l.*, balance of an account alleged to be due on a contract for work done at the Cardiff Works, but found the pursuers liable in a penalty of 50*l.* per week with respect of their delay of 12 weeks in completing the work beyond the stipulated time. The pursuers lately re-claimed to the Second Division, and the Court has reversed the foregoing decision in so far as regards the penalty. There are some points reserved for further discussion.

LOCHORE AND CAPELDRAE CANNEL COAL COMPANY (Limited). At the adjourned meeting of shareholders, held in Edinburgh on Monday, for the appointment of four new directors, in addition to the three who have been acting hitherto, after a very long discussion and a consultation between a few of the shareholders and directors, the meeting unanimously appointed Mr. Lawrie, stockbroker, and Mr. G. Robertson, W.S., are two of the new directors. The Chairman then proposed that Mr. Thornton and Mr. Alex. Nimmo be the other directors, which was carried by 11 to 7, against an amendment by Mr. Robert Robertson that Mr. Walker and Mr. Scot Skirving be elected. The meeting, after passing a vote of thanks to the Chairman, then adjourned.

The following calculations show the rate per cent. an investment would return in a few of the principal companies if the dividends last paid are kept up:—In coal and iron shares Arniston would yield fully 6½ per cent.; Benhar, nearly 8; Bolckow, Vaughan, A 7; Cairntable, about 10; Nerbudda, 2½; and Scottish Australian, 8¼. In oil shares Dalmeny would yield 5½ per cent., Oakbank nearly 11, Uphall 8½, and Young's Paraffin over 10. In copper shares Glasgow Caradon would yield nearly 8 per cent., Tharsis 9½, and Tharsis (new) about 9½ also. In miscellaneous investments we may note Muntz's Metal to yield 5⅞ per cent.; Phospho-Guano, 9½; Scottish Wagon, fully 5¼; and ditto (new), nearly 5½.

Subjoined are this week's quotations, &c., of mining and metal shares quoted on the Scotch Stock Exchanges:—

Capital. Per share.	Paid up.	Dividends. Rate per cent. per annum. Previous.	Last.	Description of shares.	Last price.
COAL, IRON, STEEL.					
£10	£8	£ 8½	£ 6½	Arniston Coal (Limited)	8
10	10	6	6	Benhar Coal (Limited)	6*l.* 1s. 6d
10	10	6	6	Ditto	6*l.* 1s.
100	50	18s 9d†	14s 6d†	Bolckow, Vaughan, and Co. (Lim.) A.	53¼
10	10	10	10	Cairntable Gas Coal (Limited)	10¼
10	10	nil	—	Chillington Iron (Limited)	70s.
82	29	nil	nil	Ebbw Vale Steel, Iron, and Coal (Lim.)	8
10	6	nil	nil	Fife Coal (Limited)	70s.
10	10	nil	nil	Glasgow Port Washington Iron & Coal (L)	30s.
10	10	—	—	Ditto Prepaid	30s.
10	10	—	—	Lochore and Capledrae (Limited)	50s.
10	10	nil	3	Marbella Iron Ore (Limited)	76s.
10	10	nil	nil	Monkland Iron and Coal (Limited)	45s.
10	10	5	4	Ditto Guaranteed Preference	77s. 6d.
100	100	nil	nil	Nant-y-Glo & Blaina Ironworks pref. (L)	19½
6	6	nil	nil	Omoa and Cleland Iron & Coal (L. & Red.)	29s. 6d.
1	1	17½	15	Scottish Australian Mining (Limited)	37s. 6d.
1	8s.	17½	15	Ditto New	8s. 9d.
Stock	100	nil	nil	Shotts Iron	91
COPPER, SULPHUR, TIN.					
4	4	—	—	Canadian Copper and Sulphur (Lim.)	3s.
10	7	40	40	Cape Copper (Limited)	35s.
1	1	15	7½	Glasgow Caradon Copper Mining (Lim.)	19s.
1	15s.	15	7½	Ditto New	15s.
10	9½	nil	nil	Huntington Copper and Sulphur (Lim.)	30s.
25s.	25s.	—	—	Kapunda Mining (Limited)	6d.
4	4	—	—	Panulcillo Copper (Limited)	35s.
10	10	6	6	Rio Tinto (Limited)	72s. 6d.
20	20	7	7	Ditto, 7 per cent. Mortgage Bonds	14
100	100	5	5	Do. 5 p.ct. Mor. Deb. (Sp. Con. Bds.)	56½
10	10	nil	nil	Russia Copper (Limited)	40s.
10	10	22½	20	Tharsis Copper and Sulphur (Limited)	20*l.* 1s. 9
10	7	22½	20	Ditto New	14⅞
1	1	—	—	Yorke Peninsula Mining (Limited)	5s.
1	1	—	—	Ditto, 15 per cent. Guaranteed Pref.	17s. 6d.
GOLD, SILVER.					
1	1	—	—	Australian Mines Investment (Limited)	8s. 9d.
5	5	7s. 6d†	7s. 6d†	Richmond Mining (Limited)	8*l.* 8s. 9d
OIL.					
10	7	6	6	Dalmeny Oil (Limited)	8
1	1	7½	25	Oakbank Oil (Limited)	45s.
1	5s.	—	25	Ditto	12s.
10	10	2½	7½	Uphall Mineral Oil (Limited) "A"	8½
10	10	—	—	Ditto "B" Deferred	10
10	10	—	—	West Calder Oil (Limited)	75s.
10	8½	9	17½	Young's Paraffin Light & Mineral Oil (L)	14*l.* 3s. 9
MISCELLANEOUS.					
50	25	5	6	London and Glasgow Engineering & Iron Shipbuilding (Limited)	25½
20	14¼	—	—	Peruvian Nitrate (Limited)	10
7	7	20	10†	Phospho Guano (Limited)	10¾
10	10	6	6	Scottish Wagon (Limited)	11¼
10	4	6	6	Ditto New	87s. 6d.

† Interim. ‖ Per share.

Last day for this account, Nov. 10; settling day, Nov. 14.

NOTE.—The above lists of mines and auxiliary associations are as full as can be ascertained, Scotch companies only being inserted, or those in which Scotch investors are interested. In the event of any being omitted, and parties desiring a quotation for them and such information as can be ascertained from time to time to be inserted in these lists, they will be good enough to communicate the name of the company, with any other particulars as full as possible.

J. GRANT MACLEAN, Stock and Share Broker.

Post Office Buildings, Stirling, Nov. 8.

UTILISING RESIDUAL OXIDES OF IRON.—The object of the invention of Mr. J. H. BALD, of Hebburn-on-Tyne, is to utilise such residual and other oxides of iron as are in a finely-divided, powdery, or pulverulent condition, and which heretofore have been unsuited for smelting and working without previous deoxidation. For that purpose he mixes the said oxides with caustic lime, and adds thereto a little water when the said oxides do not contain a sufficient quantity of moisture; he then dries the mixed mass in contact with or in an atmosphere containing carbonic acid gas. In this way the caustic lime is converted into carbonate of lime, and the mass is rendered sufficiently hard to withstand the burden of the blast-furnace, and made fit for treatment by any known or desired means. In practice he adds to residual ores from cupreous pyrites from 5 to 10 per cent. of caustic lime, and about 5 per cent. of water; and after thorough mixing under edge runners, or by any other suitable means, he spreads the mixed mass, divided into suitable pieces or lumps on a floor, and dries it in an atmosphere containing carbonic acid, obtained preferably from the waste products of combustion used to heat the drying floors on which the mixed mass is spread.

GETTING COAL WITHOUT GUNPOWDER.

The large number of accidents in collieries attributable to the use of explosives has led inventors for some time past to turn their attention to the production of instruments easy of application, and sufficiently powerful to bring down the coal by mechanical means alone. The inventions of Messrs. Bidder and Jones and Mr. J. Grafton Jones are already well known to the readers of the *Mining Journal*, and another contrivance of the same class has now been invented by Mr. G. W. ELLIOT, mechanical engineer, of Chowbent, Lancashire. There are, however, some important differences. The object has previously most generally been effected by first drilling or preparing a hole in the mineral, and then placing a wedging implement therein (composed of three pieces, a central wedge and two segments or cheeks made of iron or steel), and subsequently either driving or withdrawing the wedge between the segments, so as to force them apart and effect the fracture of the mineral. Mr. Elliott's invention on the contrary is based on the principle of the propelled wedge, and by its adoption many great disadvantages attendant on this principle as hitherto applied are overcome, a principal one of these disadvantages being that when the wedge has been driven in far as possible, whereby the maximum amount of expansion is obtained, and the mineral fails to be fractured or brought down, it is not possible to insert an additional wedge, or in any way increase the expansion, and the implement has, therefore, to be left in place until it is either hewn out or the mineral is brought down by other means. In his present improved implement Mr. Elliott employs two central or driving wedges of peculiar form, and which rest upon each other along the longitudinal axis of the implement, their inner faces being coincident, while their outer faces are inclined and form the wedge planes upon or against which the segments or cheeks are placed, one on each side. The four pieces when thus combined, and in their proper position to commence work, present in cross section a circular figure corresponding, or nearly so, in diameter with the circumference of the drilled hole. From the point where the inclined planes of the wedges and of the segments terminate all four pieces are continued outwards by thinner bars, which (when the implement is placed in position in the hole) project beyond the orifice thereof, the segments very slightly, and the wedge pieces considerably. Also at the point where the inclines of the wedges cease the bars which form their continuation, instead of being coincident and resting upon each other, as do the inner faces of the wedges as above alluded to, spring or deviate slightly from the axial line, so as to leave an opening between them sufficient for introducing an additional wedge if required.

In using the implement a hole of the required diameter and length having been drilled in the mineral, as usually, the segments are placed therein, a space being left between their inner ends and the same end of the hole (so that the wedges may have sufficient freedom of action endways), and their bar ends projecting beyond the orifice of the hole; the wedge pieces are then inserted between the segments and pushed in as far as can be done by hand; then with a hammer the wedges are alternately driven in a little at a time until the desired fracture of the mineral is effected; but if the maximum amount of expansion thus attainable is not sufficient to fracture the mineral as desired, an additional wedge is is then introduced at the opening above referred to between the wedges, to produce a sufficient amount of expansion.

The advantages of this system of double wedges are obvious, because the power of a wedge being in proportion to its tenuity, or the small angle of its inclined planes, by this system double the expansive force may be obtained to that obtainable with a single wedge with the same expenditure of propelling on each wedge. A considerably increased wedging angle can thus be obtained over that obtainable with a single wedge; these are material advantages, the object of using the implements being to obtain the greatest possible expansive force against the material forming the circumference of the hole with the least expenditure of propelling power. According to this system also there is the further advantage of being able to introduce an additional wedge between the others if necessary, and so increase the available power considerably.

NEW AND ECONOMIC PUMP.

A novel and peculiar apparatus for raising water has been invented by Mr. A. BUFFAULT, of Lyons, which will prove of especial value where it is necessary to place the motor more than from eight or nine yards above the liquid and in a place at a considerable distance therefrom. The apparatus has a pump barrel wherein works a solid piston, which in its operation descends below and rises above the discharge orifice. This pump barrel is connected by a tube to other pump barrels, arranged one below the other in a line with the first-named barrel, and which are provided with pistons fitted with valves opening upward. The pistons of the two lower barrels are connected by a rod. The diameter of the upper one is less than that of the lower one of these two barrels. The lower piston, which is connected to a lever carrying a counterpoise, in descending causes the said counterpoise to ascend. The lowest of the said barrels is immersed in the liquid. Considering the solid piston to have a downward movement, as soon as its lower surface has passed the aforesaid orifice there will be caused a pressure upon the liquid contained in the tubes. Then by reason of the incompressibility of liquids the valve of the second piston will close, and the said piston will descend. The third piston will also descend the same distance, and as its displacement leaves behind it a vacuum which is only partially filled by the descent of the said second piston, it follows, therefore, that a certain quantity of liquid is caused by atmospheric pressure to enter the barrel of the third or lowest barrel or cylinder above the piston therein. The latter in descending will cause the ascent of the aforesaid counterpoise, which will be caused to act by its weight when the motive force causes the said piston to rise, and the second piston will then ascend. The valve of the lowest piston will then close, and the liquid contained between this piston and the piston above it passes into the space above this last-named piston.

It will be understood, therefore, that after a certain number of piston strokes the liquid that has thus passed above the second piston will arrive at the spout, and will be discharged at the moment when the first or upper piston is above this spout. In some instances he employs a pump whose piston is provided with a counterweight which actuates it by the aid of a chain passing over a guide pulley, and in other cases he dispenses altogether with a counterpoise or weight, and employs a float arranged within a chamber constructed below the ascension column. This float must have such dimensions as will give it the power to raise the second and third pistons when the first or upper piston is raised, so that it will effectually replace the said counterpoise. In another modification of the invention the apparatus has a syphon tube, the short arm of which is bent upward, and is fitted with a large and small piston, the large piston being above the other piston, and both being connected by a rod. The counterweight is in this case placed on a rod extending directly upward from the said large piston.

IMPROVED STEAM-ENGINE.—Mr. J. ANTHONY, of Sharon Springs, New York, has patented an invention the object of which is to furnish an engine that is simple in construction, compact in form, and efficient in operation, which may be adopted to any of the purposes for which ordinary engines are used; but is especially designed for locomotives and steamboats. The operation of this improved engine is—Steam is admitted to the chest through an opening, whence it passes through ports to the steam-chest and through one of the ports into a cylinder. The valves, by their connection with a lever, are made to move in opposite directions, so that when one of the supply ports is opened the exhaust port below it in the same end of the cylinder is closed, while at the opposite end of the cylinder the exhaust port is open and the supply port is closed. The piston is propelled by the steam towards the end of the cylinder until it strikes one of the ribs, when the valves are shifted and the piston is moved towards the opposite end of the cylinder. The reversing of the engine is effected by admitting steam to the valve-chest to start the engine on one side of a partition, and afterwards admitting it to the other side. All the cylinders may be used in connection, or by disconnecting the coupling they may be used in pairs. When the engine is applied to steamboats one pair of cylinders may be connected with each wheel, and by the action of the engine alone the boat may be steered.

AWARDED THE PRIZE MEDALS AT LEEDS, MANCHESTER, AND WREXHAM EXHIBITIONS, 1875 AND 1876.

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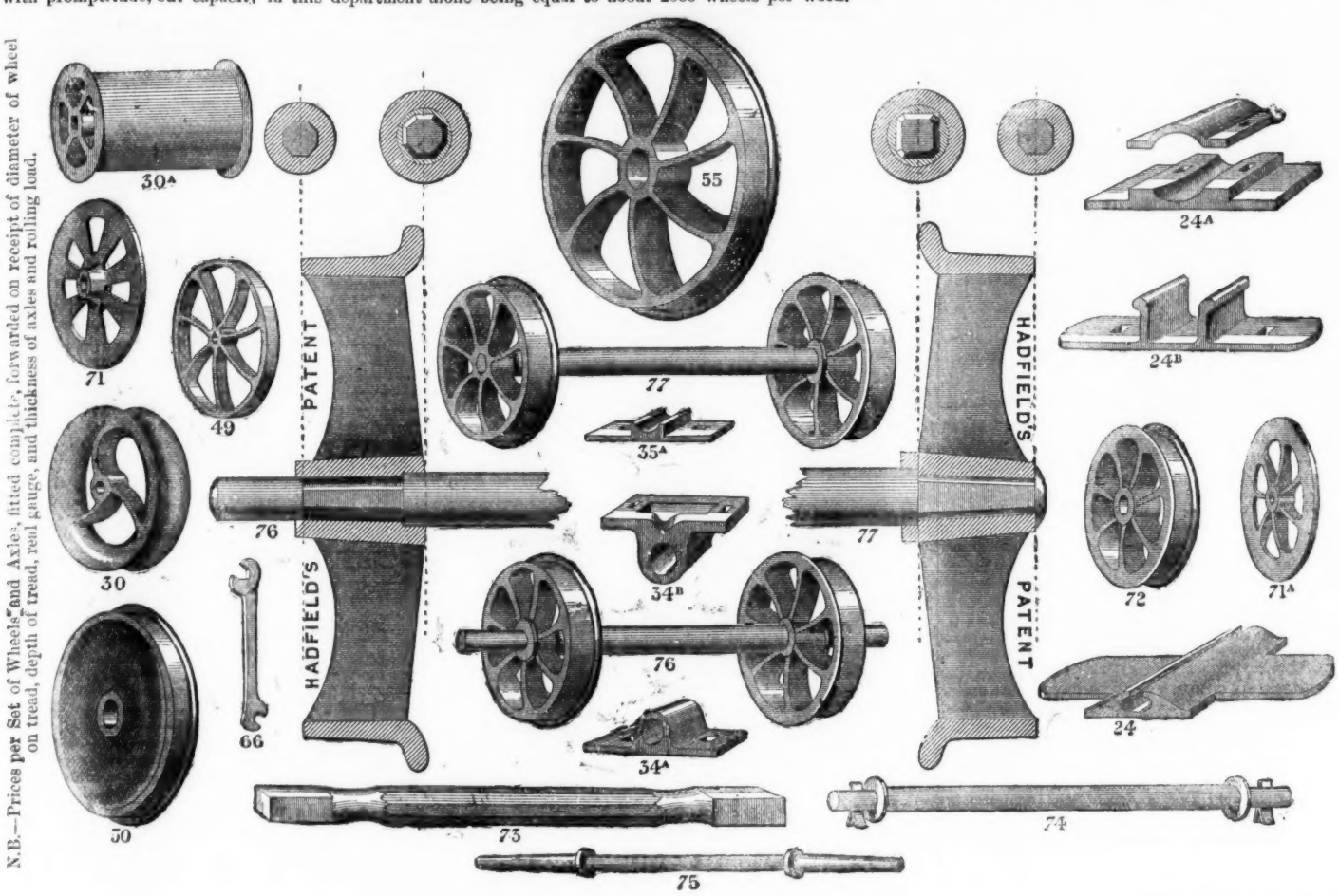

N.B.—Prices per Set of Wheels and Axles, fitted complete, forwarded on receipt of diameter of wheel on tread, depth of tread, rail gauge, and thickness of axles and rolling load.

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HADFIELD'S PATENT METHOD OF FITTING WHEELS UPON AXLES.

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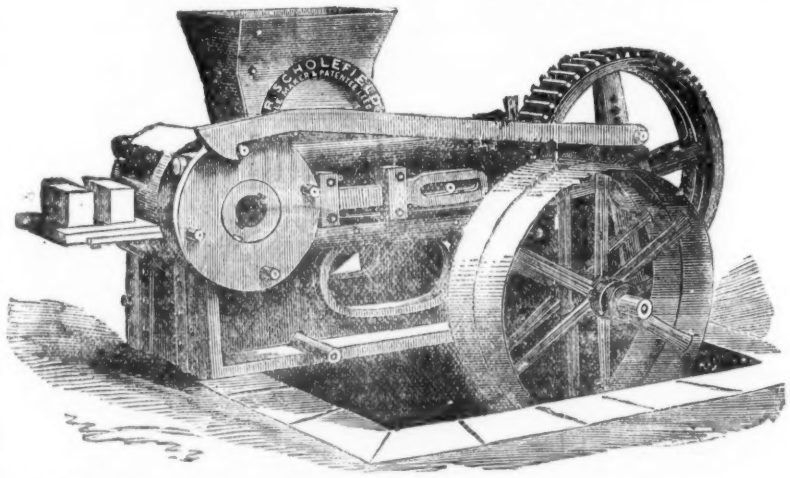

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1 boy taking off bricks from machine, and placing them in barrow ready for the kiln, 2s. per day	0 2 0
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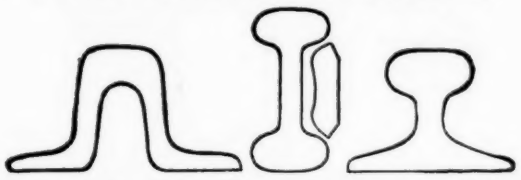

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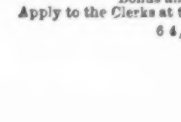

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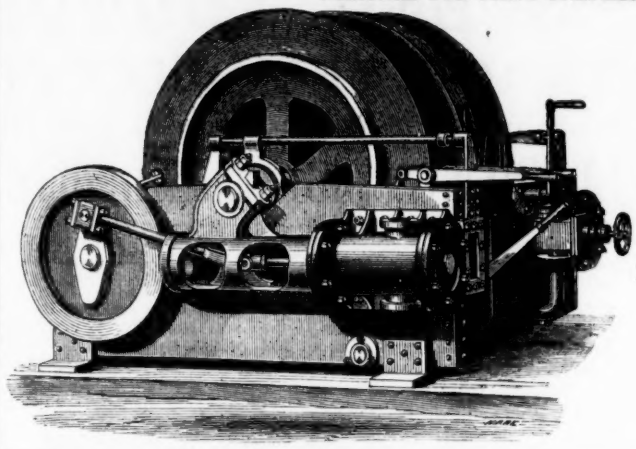

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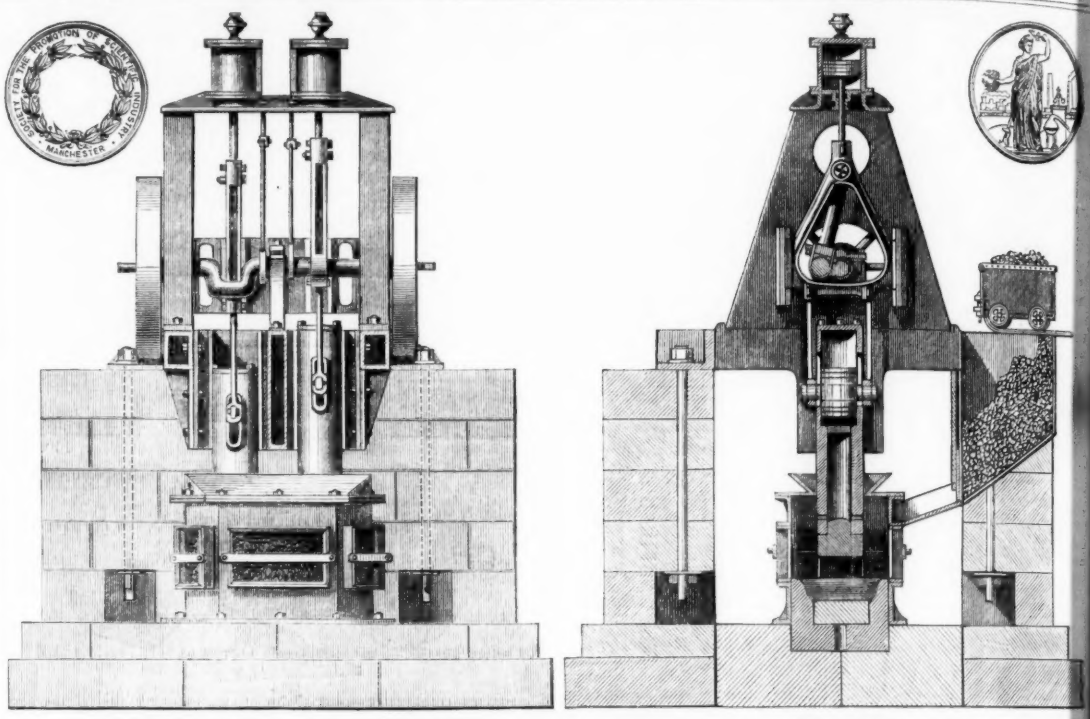

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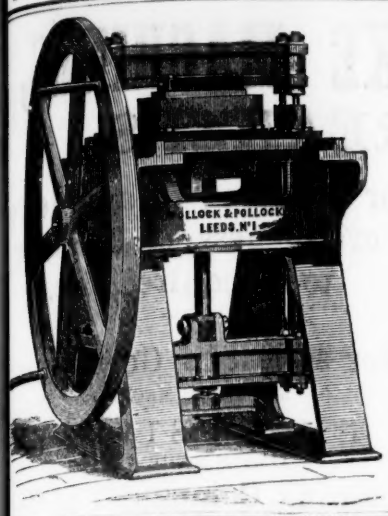

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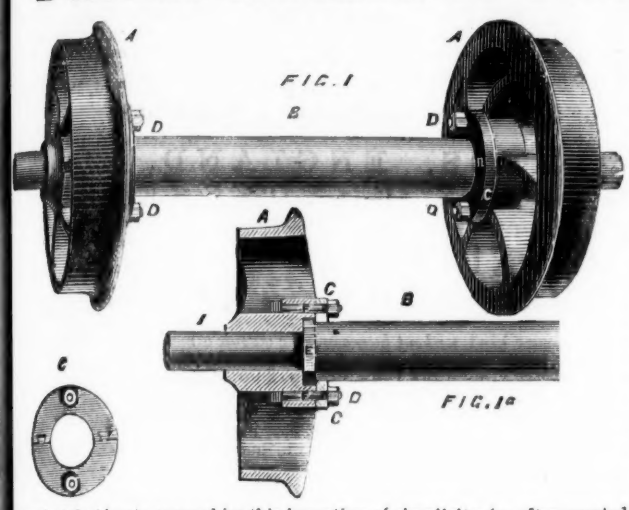
HAVE PLEASURE IN CALLING THE ATTENTION OF THE MINING WORLD TO THEIR

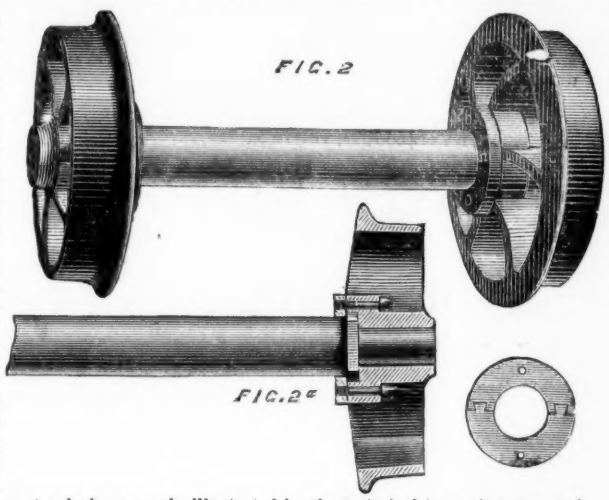
Patent Method of Fitting up Cast Steel Wheels and Axles.

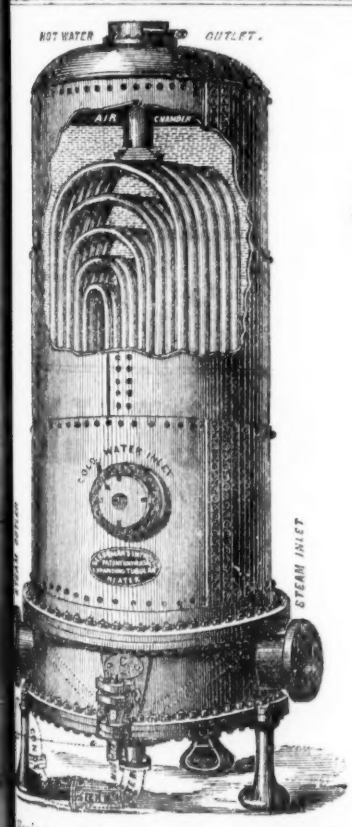


Figs. 1 and 1a show a longitudinal view and plan of a pair of corf wheels and axles fitted up for outside bearings. A A are the wheels; B, is the axle; C C, the washers; D D, the bolts; E, the collar on axle B; and F, the recessed boss in the wheel.

The wheel is cast with a recessed boss in the inside, made to any shape, corresponding in shape and depth with a collar formed on the axle. Figs. 2 and 2a show a longitudinal view and plan of a pair of corf wheels fitted up for inside bearings. The washers are secured to the boss of the wheel in outside bearings by bolts and nuts, and in inside bearings by set screws.

The advantages of the above system are:—A, the singular simplicity of fitting—enabling any inexperienced person, with the aid of a spanner or screw-driver, to detach the wheels from the axle or fit them together in a very short time. B, perfect solidity, the wheels and axles becoming as one piece. C, durability, no need or putting the wheels or axles into the fire, under any circumstances, which is so detrimental to wheels, rendering them remarkably brittle, and which under other systems are detached from the axle by the aid of fire. D, economy in fuel and wages, saving hundreds of pounds yearly to large coal owners. The important desiderata secured by this invention of simplicity (so often wanted in patents), solidity, durability, and economy, have not only been amply illustrated by the technical journals interested in the progress of mining operations in this country, but have at once been fully recognised by leading authorities in the mining world.





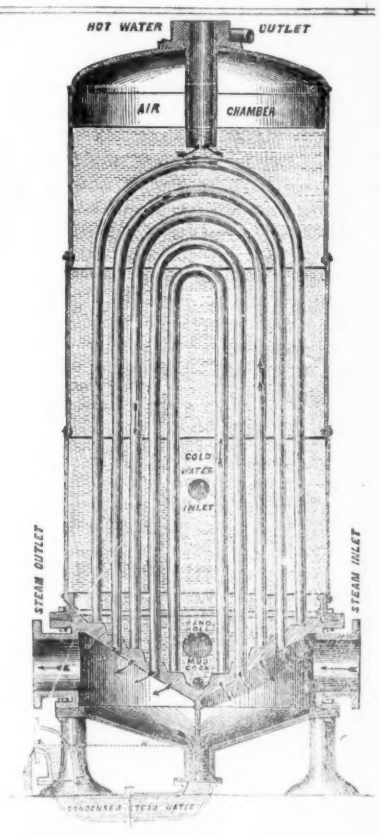
IMPORTANT.

JOSEPH WRIGHT AND CO.

(LIMITED),

NEPTUNE FORGE ENGINE AND BOILER WORKS,

TIPTON, STAFFORDSHIRE,



Having purchased the Engineering Business lately carried on by R. BERRYMAN AND CO., at 23, Congreve-street, Birmingham, and 28, Wilson-street, Finsbury-square, London, have removed the whole to their Works at TIPTON, to which place ALL COMMUNICATIONS SHOULD IN FUTURE BE ADDRESSED, and where the BERRYMAN HEATER can be seen at work, and in every stage of manufacture.

Being the SOLE MAKERS and PATENTEES of these CELEBRATED COAL SAVERS and EXHAUST STEAM UTILISERS, and having remodelled and greatly improved them, adding largely to their HEATING SURFACE and WATER CAPACITY, J. W. and Co. have put down a special plant, which includes an entire new set of improved patterns, enabling them to offer these FEED WATER HEATERS to the public at

GREATLY REDUCED PRICES.

This arrangement of BRASS TUBES of a great length giving an enormous HEATING SURFACE makes this HEATER not only the MOST POWERFUL ever invented, but its FIRST COST PER FOOT OF HEATING SURFACE IS LESS THAN HALF THAT OF ANY OTHER. It will condense the whole of the Exhaust Steam from the Engine if required, and entirely does away with the NOISE and BACK PRESSURE from exhaust pipes.

ALL THE TUBES ARE OF SPECIALLY PREPARED SOLID DRAWN BRASS AND COPPER; both ends are expanded into the bored holes of the same Tube Plate, METAL to METAL, and every tube is free to expand and contract independent of each other. Leakage is impossible, as, when the tubes are once fixed, nothing short of cutting out will remove them. No scurf adheres to the tubes because of the difference of expansion between SCURF and BRASS. The inside of the Heater can be washed out by means of the mud cock and hand hole whilst at work.

Only one pump or injector is required, and as the Heater is placed between the pump and the boiler, the water is forced, COLD, into it, and passes out at the top HOT into the boiler direct. Where the WATER WORKS PRESSURE is sufficient no pump or injector is needed.

The water being heated to BOILING POINT UNDER PRESSURE in the Heater, a saving of from 20 per cent. to 25 per cent. in fuel is effected; the disastrous results of grease in boilers are also avoided, the sewage and other loose matter in the water being deposited in the Heater, the acids are liberated there instead of in the boiler.

Every part can be lined with BRASS, COPPER, or LEAD, as may be required in special cases for heating water or any kind of liquor in large quantities for CHEMICAL WORKS, BATHS, WASH-HOUSES, AQUARIA, GREENHOUSES, BREWERIES, WOOL WASHING, DYE WORKS, TANNERIES, &c., &c.; they will also HEAT AIR FOR CUPOLAS AND BLAST FURNACES, and are now at work as INTERHEATERS for compound engines with direct steam from the boiler with a further saving of 15 per cent.

The New Price List, with detail information, is now ready, and will be sent on application, together with an Illustrated Catalogue, with references and testimonials from Firms using TWO HUNDRED AND THIRTY-THREE of these Heaters.

Printed by RICHARD MIDDLETON, and published by HENRY ENGLISH (the proprietors) at their offices, 26, FLEET STREET, E.C., where all communications are requested to be addressed.—November 10, 1877.